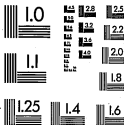


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Thomas A Edison Papers

A SELECTIVE MICROFILM EDITION

PART IV
(1899-1910)

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Lisa Gitelman
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Bethesda, MD
1999

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Thomas A. Edison Papers
at
Rutgers, The State University
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18 June 1981

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**Legal Department Records
Phonograph - Case Files**

Thomas A. Edison v. Frederic M. Prescott

This folder contains material pertaining to the suit brought by Edison against Frederic M. Prescott in the New Jersey Court of Chancery. The case was initiated in June 1899 and involved Prescott's misrepresentation of himself as Edison's agent. It was a companion suit to *Edison Phonograph Company v. Frederic M. Prescott*, which involved infringement of Edison's U.S. Patents 386,974 and 393,466. The selected items include Edison's bill of complaint; Prescott's answer, which bears Edison's marginalia; an affidavit by Edison; and correspondence regarding the suit. Among the documents not selected are items pertaining to other legal actions against Prescott.

NATIONAL PHONOGRAPH CO.,
EDISON LABORATORY,
ORANGE, N. J.

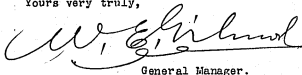
March 13, 1899.

Howard W. Hayes, Esq.,
Prudential Building,
Newark, N. J.

Dear Sir:

You will remember our writing to the Postmaster, New York City. I now enclose you a copy of his reply to Mr. Edison. There is no doubt that we have got to prosecute Mr. Prescott if it is our intention to make him desist from using Mr. Edison's name in his business. As I have already stated, he has on his door the following: "F. M. Prescott, Successor to Edison Phonograph Agency". Is there no way in which this can be eliminated?

Yours very truly,



W. G. Hillwood
312

General Manager.

WHS/IWW

[ENCLOSURE]

NATIONAL PHONOGRAPH CO.,
EDISON LABORATORY,
ORANGE, N. J.

(COPY)

March 29th, 1899.

Mr. Thomas A. Edison,

Orange, N. J.

My dear Sir:

I duly received your favor of the 28th ultimo, in regard to business carried on at 44 Broad Street, this city, by Mr. F. M. Prescott, under the title of "Edison Phonograph Agency", and advising me that Mr. Prescott has no authority to use the above mentioned title, and requesting that all the mail received at this office directed as above described should be delivered to the National Phonograph Co. at Broadway and 26th Street, New York.

In reply I have to say that Mr. Prescott has furnished me with a written statement in regard to his use of the above named title, by which it appears that he was engaged in business during 1897 under the name of "Edison Phonograph Agency", by and with the consent of the Manager of the National Phonograph Co.; that about May, 1898, he entered into co-partnership with one C. E. Stevens to continue business under the same title and at the same address, 44 Broad Street, N. Y., that subsequently the co-partnership was dissolved and by mutual consent Mr. Prescott was to liquidate the affairs of the defunct Agency; that he is so engaged at the present time; that he is not now advertising or using and has not advertised under or used the title "Edison Phonograph Agency" since the dissolution of the co-partnership, and that the only business now carried on under that name is such as relates to the former business of the Agency. He also advises me that he would be unable to successfully terminate or wind-up the affairs of the Agency should the

[ENCLOSURE]

NATIONAL PHONOGRAPH CO.,
EDISON LABORATORY,
ORANGE, N. J.

T.A.R.

(2)

3/9/99.

mail so addressed be diverted from him and he desires such mail delivered to him as formerly. I have accordingly directed that all mail directed to the Edison Phonograph Agency shall be delivered as formerly at 44 Broad St., in accordance with the regulations of the Post Office Department. You have, however, recourse to the courts to test the right or authority of Mr. Prescott to the alleged unauthorized use of the name "Edison" in connection with his business, and should you succeed in restraining him by injunction or otherwise from the use of the name "Edison", the order of the Court will be respected at this office.

I am,

Very respectfully,

C. Van Cott,

Postmaster.

IN CHANCERY OF NEW JERSEY.

To the Honorable Alexander T. McGill, Chancellor
of the State of New Jersey:

Humbly complaining shews unto your Honor your
orator Thomas A. Edison of the Township of East Orange, in
the County of Essex and State of New Jersey; that your
orator is an inventor by profession and is engaged in the
manufacture of various articles invented by him, and in
the manufacture of various commercial articles by the use
of machinery and methods invented by him; that he has
taken out numerous patents in the United States and other
countries of the world, and is well known throughout the
business and scientific world; that among his other in-
ventions, he invented the phonograph, a machine for re-
cording and reproducing sound, and took out patents for
the said invention in the year 1878, both in the United
States and other countries throughout the world; that
since that time he has continued experimenting in regard
to the said invention and has invented many improvements
thereon, and has taken out a large number of patents for
such improvements in the United States and the other
countries of the world; that on account of his numerous
inventions and his reputation in the business and scien-
tific world, the use of his name in connection with any
manufactured article greatly enhances the value of that
article in the popular mind; that the said patents taken
out by him covering inventions in regard to the phonograph
are either owned by him personally or by corporations

In Chancery of New Jersey

Plaintiff

Thomas A. Edison
Compl.

and

Fredrick W. Bennett

Def.

Ch
Pl
2

Dee r affidants

Hayes Hammett
Sohn

Trust Offices
Hayes & Hammett
Newark, N. J.
200 N. INDUSTRIAL BLVD.
700 BRIDGE STREET

which he has organized for the purpose of manufacture and selling the phonograph and materials and supplies connected with it; that he is the owner of a majority of the capital stock in all said corporations, and therefore either owns absolutely or owns a majority interest in all of said patents and of the companies or corporations engaged in the manufacture of said articles; that the business of manufacturing and selling phonographs and supplies therefor is a very large and profitable business, and is increasing daily, and that your orator derives large profits for the same; that he is engaged to a large extent in his laboratory at West Orange in experimenting in connection with the phonograph and improvements therefor, and also has in his employ a large number of men who are engaged in the same occupation; that a large part of the value of the business of selling phonographs and supplies therefor consists in the use of your orator's name in connection therewith, and that said phonographs and supplies are to a large extent purchased by the public because they are known to be inventions of your orator, and are manufactured by your orator or the said companies and corporations identified with and controlled by your orator.

And your orator further shows that he formerly maintained an office in the Edison Building on Broad Street in New York City and maintained it there from the year 1891 until the latter part of the year 1898; that about the year eighteen hundred and ninety-five one Frederic M. Prescott of the Township of Montclair in the County

of Essex in this State, became engaged in the business of buying and selling phonographs and supplies therefor; that said business was at first carried on by the said Prescott, as your orator is informed, simply as a broker, but that afterwards, somewhere about the year eighteen hundred and ninety-seven or the early part of the year eighteen hundred and ninety-eight, the said Prescott started in business on a larger scale and secured rooms in the said Edison Building and advertised himself as "Edison Phonograph Agency;" that the selection of the said Edison Building for his office and the use of the term "Edison Phonograph Agency" was made by him to enable him to get hold of letters or telegrams that might be sent to your orator addressed at his said ~~office~~ office in said building, and to intercept persons who might call at said building to inquire for your orator; that your orator became aware that the said Prescott was pursuing that course of conduct, and opening letters and telegrams addressed to your orator in the summer or fall of the year eighteen hundred and ninety-eight, and about that time your orator also found that the said Prescott was representing himself by mail to various persons as being your orator's agent, and by means of that was attempting to defraud such persons; that your orator in the month of October, eighteen hundred and ninety-eight received a letter from Jesus Riera of Ybor City, Florida, complaining that the said Riera had sent to the said Prescott some money for an automatic speaker, which is a part of a phonograph, and had not received it from him, and that also that one

Federico Arnavat had sent an order of \$70.00 to your orator for phonograph and supplies, and had not received the goods; that the said letter of the said Riera was addressed "Mr. Thomas A. Edison, New York", and was forwarded to your orator at West Orange; ^{and} that your orator ~~also~~ ^{also} ~~is satisfied~~, that the said sum of money sent by the said Arnavat was received and appropriated by the said Prescott as was also the said money sent by the said Riera. A copy of the said letter of the said Riera is annexed to this bill and made part hereof, marked "Schedule E".

And your orator further shows that on the thirty-first day of October, eighteen hundred and ninety-eight he received an envelope by mail from New York addressed to your orator at Orange, New Jersey (upon one corner of which envelope was printed the address "Edison Phonograph Agency, Edison Building, New York, N. Y. U. S. A.") enclosing a telegram as follows:

"Grand Forks, N. D., Oct 29 - 98.

Thos. A. Edison,
44 Broad St.,
New York.

Is my letter not worth a reply. Answer quick.

H. S. Roykjalin.

1254PM."

copy of which telegram is annexed to and made part of this bill, marked schedule E.
That said Prescott afterwards informed your orator that he had opened the envelope containing said telegram and forwarded the telegram to your orator. And your orator charges and that the said Prescott opened said envelope with the idea that it contained a telegram in connection with the sale of phonographs and that the said Prescott

has opened other telegrams to your orator of which your orator has no knowledge; that the said No. 44 Broad Street is the street number of the said Edison Building in which your orator formerly had an office.

And your orator further shows that on the twenty-fifth day of November, eighteen hundred and ninety-eight he received a postal card addressed to "Edison Phonograph Agency, Mr. F.M. Prescott, Manager, New York, N.Y." which said postal card was delivered at the ^{store of the} Edison Manufacturing Company, a place of business in New York maintained by your orator where your orator does business under that name. The said postal card complains that the writer, A. W. Samuels, had ordered and paid for certain goods from the said Agency and that the goods sent were not of your orator's manufacture; a copy of which said postal card is annexed to, and made part of, this bill, marked "Exhibit B."

And your orator further shows that after receiving the said letter, post card and telegram, he wrote to the said Prescott stating that, he, the said Prescott, must discontinue at once the use of your orator's name in connection with his business, and from holding himself out to be your orator's agent; that the said Prescott wrote to your orator in reply stating that he was just winding up his business and would close it up before the end of the year, and then would discontinue the use of your orator's name; that your orator in order to avoid the trouble and expense of litigation, and thinking that no further injury would accrue to your orator, did not take steps to compel the said Prescott to at once discon-

time the use of your orator's name and from advertising himself as your orator's agent. Copies of the said letters that passed between your orator and the said Prescott (copying the first letter from your orator to said Prescott for copy of which you orator is) are annexed to and made part of this bill and marked Schedule "D," "E" or "O" respectively.

And your orator further shows that the said Prescott instead of discontinuing the use of your orator's name as aforesaid after the first of January, eighteen hundred and ninety-nine, still continued his said business under the name "F.M. Prescott, Successor to Edison Phonograph Agency," and continued and still continues to hold himself out as your orator's agent in connection with the business of selling phonographs and supplies therefor and continued and still continues to deceive and defraud the public by that means.

And your orator further shows that the said Prescott is now sending out catalogues of phonograph records and supplies in the Spanish language in which he advertises himself as the "Edison Phonograph Agency," and your orator has annexed to this bill and made a part thereof copies of two such circulars issued by him, marked Schedules "P" and "Q" respectively and makes them part of this bill.

And your orator further shows that on the twenty-third day of February, eighteen hundred and ninety-nine the National Phonograph Company, a corporation of this State, engaged in the business of selling phonographs and supplies, received a letter from one W.T. Hays of Waynesburg Pa., complaining that the said Frederic M. Prescott had

received money from the said Hays for phonographic goods and had failed to send the goods, and your orator has annexed a copy of said letter to this bill and makes it a part thereof, marked "Saldua H."

And your orator further shows that on the twenty-eighth day of February, eighteen hundred and ninety-nine, he wrote to the post master of the City of New York requesting that the postal authorities of that City should take some means to prevent the delivery of any letters having your orator's name on from being delivered to the said Prescott, and that in reply thereto your orator received a letter from the post master in New York stating that the said Prescott insisted on having all mail addressed to the Edison Phonograph Agency delivered to him, and that the postal authorities therefore would have to deliver such mail to him. And your orator has annexed a copy of his said correspondence with the post master of said City of New York to this bill and makes it part thereof.

marked "Saldua I & J, respectively."

And your orator further shows that on the fourth day of May, eighteen hundred and ninety-nine he received from one C.E. Stevens, a man engaged in the City of New York in selling phonographs and supplies therefor, a letter from one R.A. Cousins of Georgetown, Demorara, stating that in December eighteen hundred and ninety-eight he had sent some money to the said Prescott for a Standard Phonograph and in reply the said Prescott said that he would send him instead a Graphophone, and that no machine or money had been ^{sent} returned to him by said Prescott, *and had his money been returned*

And your orator has annexed a copy of said letter to this bill and makes it a part hereof, marked "Schedule B"

And your orator further shows that the machine referred to in said letter as an "Eagle" is a machine for recording and reproducing sound called a Graphophone and is an inferior machine to the phonograph made under your orator's patents and in many essential particulars is covered by your orator's patents, and that the sale of the said graphophone is injurious to your orator's business interests.

And your orator charges and insists that the said Frederic M. Prescott is unlawfully using your orator's name in connection with his said business, and is deceiving the public by such use of said name and is inducing the public to believe that he, the said Prescott, is an agent of your orator, and that by receiving money from the public and in not furnishing them goods ordered and paid for by them, and in not conducting his business in a proper way, ^{he} tends to bring your orator's name and business into disrepute with ^{such of} the public ^{as} are not personally acquainted with your orator. ^(C)

In tender consideration whereof, and for as much as your orator is remediless in and by the strict rules of law and can find relief only in this court, to the end

1. That the said Frederic M. Prescott may full, true and perfect answer make to the premises without oath (answer under oath being expressly waived);

2. That the said defendant Frederic M. Prescott may be restrained from using your orator's name in con-

noction with the said business carried on ^{by him} and from advertising or holding out himself as an agent of your orator, or ^{in being} in any way connected with your orator in business, and from receiving or opening any letters, telegrams or postal cards addressed to your orator or having your orator's name thereon;

3. That the said defendant, Frederic M. Prescott, may be decreed to account for and pay over to your orator the income and profits unlawfully derived by him from the said ^{unlawful} use of your orator's name, and also the damages your orator has sustained by reason of the unlawful acts of the said defendant, and

4. That your orator may have such further or other relief as the necessity of the case may require, and may be agreeable to equity and good conscience.

May it please your Honor the premises considered to grant unto your orator a writ or writ of injunction issued out of and under the seal of this Honorable Court, restraining the said defendant as above prayed for, and also the state's writ of subpoena to be directed to the said defendant, issued out of and under the seal of this court, commanding him on a certain day and under a certain penalty therein to be expressed, to be and appear before this honorable Court to answer this bill of complaint, and to stand to, abide by and perform such order and decree in the premises as to your Honor shall seem meet and shall be agreeable to equity and good conscience.

And your orator as in duty bound will ever pray

&c.

Hayes Lambert

Complainant
Solicitors for ~~and as Counsel with~~

~~Plaintiff~~

Howard W. Hayes
Of Counsel

State of New Jersey:

:88

County of Essex :

Thomas A. Edison being duly

sworn according to law on his oath says: I am the complainant in the foregoing bill of complaint made. I have read the same and the facts therein set forth are true. The copies of letters, telegram and postal card annexed thereto are true copies of the originals sent by ^{or to} me, or which are in my possession. I am an inventor by profession and am engaged in the manufacture of various articles invented by me ^{and} in the manufacture of various commercial articles by use of machinery and methods invented by me. I have taken out numerous patents in the United States and other countries of the world, and am well known through out the business and scientific world. Among my other inventions I invented the phonograph, a machine for recording and reproducing sound, and took out patents for that invention in the year 1878, both in the United States and in other countries. Since that time I have continually experimented in improving the said invention and have made many improvements thereon, and have taken out a large number of patents for such improvements in the United States and other countries. On account of my numerous inventions and my reputation in the business and scientific world, and the high class workmanship of the articles manufactured by the manufacturing establishments with which I am connected, the use of my name in connection with any manufactured article greatly enhances the value of that article in the popular mind. The patents taken out by me ^{in the United States} covering inventions connected with the phonograph and its accessories, are either owned by me personally or

by corporations which I have organized for the purpose of manufacturing and exploiting the phonograph and its accessories. I own or control a majority of the stock of all these corporations. The business of manufacturing and selling phonographs and supplies therefor is a large and profitable business, and is increasing all the time, and I derive large profits from it. I am engaged from time to time in my laboratory in West Orange in making experiments for the improvement of the phonograph, and have in my employ a large number of men who are engaged in the same occupation. A large part of the value of the business of selling phonographs and its accessories consists in the use of my name in connection with them, and such goods are purchased by the public to a large extent because they are known to be my inventions and to be manufactured by me or the companies with which I am connected. There are other machines now manufactured and sold which record and reproduce human speech and other sounds, but they are inferior in all respects to the machine invented by me and in many essential characteristics they are covered by my patents. They are, however, sold in competition with phonographs. X I maintained a personal office in the Edison Building No. 44 Broad Street in the City of New York from about the year 1891 up to the latter part of the year 1895, but have not used it since that time. On account of the name of that building and of my office formerly being there, it is generally supposed to be my headquarters, and the place where letters or telegrams intended for me can reach me. Some time in the year 1895 one

R

Frederic M. Prescott, who I understand lives in Montclair Township, in this ~~State~~^{State}, went into the business of buying and selling phonographs and supplies therefor, purchasing them from companies who sold or manufactured them. They, of course, all come originally from the Company that manufactured them, which is controlled by me. At first (so far as I can learn) Prescott carried on the business simply as a broker, but afterwards, somewhere about the year 1897 or the early part of the year 1898, he started in the business on a larger scale and rented rooms in the said Edison Building, and advertised himself as "Edison Phonograph Agency." I understand that he selected the said Edison Building for his office and used that mare to enable him to get hold of letters or telegrams that might be sent to me and addressed to me at my former office in that building, and in order that he might get the trade of persons who might call at that building trying to see me, and that he might better pass himself off as connected in business with me. I became aware that Prescott was pursuing that course of conduct x and was opening letters and telegrams addressed to me, sometime in the summer or fall of 1898, and about that time I also found that the said Prescott was representing himself by mail to various persons as being my agent, and by that means apparently was attempting to defraud such persons. In the month of October, 1898 I received a letter from Jesus Riera of Ybor City, Florida, a copy of which is annexed to the foregoing bill, and on or about the thirty-first day of October of the same year I received an envelope by mail from New

York addressed to me with Prescott's return address on the corner, containing a telegram, a copy of which is set forth in the foregoing bill. Prescott afterwards informed me that he had opened the envelope enclosing the telegram and had forwarded the telegram to me. On the twenty-fifth day of November I received a postal card addressed to the Edison Phonograph Agency but delivered at the office of the National Phonograph Company ~~at New York~~, a corporation in which I am interested, a copy of which is annexed to the foregoing bill. After I learned from this letter and the postal card and telegram, the course that Prescott was pursuing, I wrote him telling him he must discontinue at once the use of my name in connection with his business, and received word from him that he would do so shortly. A copy of my correspondence with him in regard to this is annexed to the foregoing bill. I did not at once take action against him, as I presumed that this conduct on his part would soon stop. I understand, however, that said Prescott after the first of January, 1899 continued his business under the name of "F.M. Prescott, Successor to Edison Phonograph Agency," and continued to hold himself out as my agent in his business. The letter from W.T. Hays annexed to the foregoing bill is one received by the National Phonograph Company. In order to stop the annoyance of his use of my name and the injury to my business through his business methods, I corresponded with the postal authorities in New York, endeavoring to get them to deliver to me letters intended for me which he received, but was

unable in that way to effect the purpose I intended. On that account I am compelled to take legal measures to prevent this unauthorized and injurious use of my name by the said Prescott. I have delayed going to the expense and trouble of taking legal action in the hope that my purpose could be accomplished in other ways.

Sworn to and subscribed :
 before me this 29th day : *Thomas A. Edison*
 of June, A.D., 1899 at :
 West Orange. :

J. L. Randolph
 Notary Public for
 New Jersey

(Seal)

[ATTACHMENT]

THE EDISON PHONOGRAPH AGENCY

F.M.Prescott Manager.

Edison Building,
4 4 B r o a d S t.,
New York, N.Y.

Cable address:

"Fuse, New York".

AL.A.B.C. Commercial, Jobbers,
Huntings, and Private Code used.
Telephone "1610 Broad."

(Phonographs,
(Records,
(Projectoscopes,
(Original films,
(Kinotoscopes,
(Kinetophones,
(X Ray Apparatus,
(Fan motors,
(Lalande Batteries &
(Electro Dental,
(Electro Surgical.

Thomas A. Edisons

New York, Dec. 12th, 1898.

Mr. Thomas A. Edison,

Edison, N. J.

Dear Sir:-

Your favor of Dec. 8th. received and carefully noted. You must be misinformed that I am advertising myself as your agent, as I do not remember ever having done so. I styled myself while in partnership with Mr. Stewens, as "Edison Phonograph Agency", and am obliged to continue the use of that name on my letter-heads and office door so long the Edison Phonograph Agency liquidation is in progress, as I am still selling Edison phonographs, the use of the name cannot be injurious to your intrest. I, however, have no desire to use your name in connection with the Edison Phonograph Agency longer than is absolutely necessary to liquidate such Agency, as I find I can sell more goods on my own name than under any other, and I propose, in the future, to advertise "F.M.Prescott". I am only sorry that I did not come to this conclusion years ago. My sales for November were \$17,164. I believe the Edison Mfg. Co. received about \$1200 of this amount while the National Phonograph Co. received nothing. This month, and from now on, none of your interests will receive directly any orders of mine.

[ATTACHMENT]

2.

2.

Mr. Thomas A. Edison.

I am aware that Mr. Stevens' business is increasing slightly, but I am confident, with all the protection and the backing you and Mr. Gilmore may give him, that it will never amount to what I am able to do. It seems to me that you are paying pretty dearly for endeavoring to establish Mr. Stevens in the business, but so long as you are satisfied, I have nothing to complain of. If you live long enough, some day, I think, you will be convinced of the truth of the statements I have been trying to impress upon you. Mr. Gilmore has stated to you and has circulated the story to the trade that I have been cut off from receiving your goods because I cut prices; but you know and I know that the only prices I have cut have been to follow Stevens' lead and endeavor to meet his competition, and although Mr. Stevens still continues to cut prices and offer phonographs at the ridiculous discount of 45%, at which quotation I could not possibly sell, his supply is not cut off, doing the same thing that I have been accused of. The real reason that I was cut off was that Stevens might succeed and the trade is thoroughly aware of that fact to his discredit and to your discredit.

I have written this long letter as I know you do not have time to go into details and whatever Mr. Gilmore and others tell you, you take for the Gospel without hearing the other side of the story.

Very truly yours.

(Signed) F. M. Prescott.

[ATTACHMENT]

Dec. 23rd, 1898.

F.M.Prescott, Esq.,
44 Broad Street,
New York.

Dear Sir:-

I am in receipt of your letter of the 12th. inst., and shall absolutely insist on your discontinuing the use of my name in any way in connection with your business.

You have not and never have had the least right to use it.

I have instructed my counsel to prepare papers in the matter, and unless its use is entirely discontinued within ten days from the date hereof, legal action will be taken against you.

Yours very truly,

Thomas A. Edison.

[ATTACHMENT]

THE EDISON PHONOGRAPH AGENCY, F.M.Prescott, Manager. Edison Building, 4 1/2 Broad St., New York, N.Y.	(Phonographs, (Records, (Projectoscopes, (Original films (Kinetoscopes, (Kinetophones, (X Ray Apparatus, (Fan Motors, (Lalande Batteries &c (Electro Dental, (Electro Surgical.
-------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Cable Address: Thomas A. Edison
"Pase New York,"
A.L.A.B.C. Commercial, Liebers,
Huntings, and Private code used.
Telephone "1610 Broad".

New York, 27 December, 1898.

Mr. Thomas A. Edison,
Orange, N. J.

Dear Sir:-

I have your favor of the 23rd. inst., and carefully noted. Although you admitted to me last September that there was no reason why I should not use your name and that you could not stop me from using it if you wanted to, I will see that your request is complied with.

An associate of the house of Messrs. Pathe Freres of Paris, the largest firm in Europe in the projectoscope, film and talking machine line, is in New York, making his headquarters with me. He has brought over samples of films of his house, also samples of the blanks they are making in France. Of course he could not do any phonograph business with you, but he would like to meet you to talk over the film business, as it is possible you might wish to make some arrangement whereby you could sell ^{his} films in America, or exchange negatives with him, he manufacturing Edison films in France from your original Edison negatives and you manufacturing Pathe films in Orange from original Pathe negatives.

If you or Mr. Gilme can spare a few minutes I should be pleased to bring out to Orange this gentleman at your convenience. He is returning to Paris on January 7th., so if you will grant him the favor of an interview it must be before that date.

Awaiting your pleasure, I am,

Yours ~~very~~ truly,
F.M.Prescott.

[ATTACHMENT]

Jesus Riera
Grocer,
First Class Cuban Coffee.
Ybor City.

Tampa, 10/22/98.

Mr. Thomas A. Edison,
New York.

Dear Sir:-

I have written a letter to your Mr. Prescott in answer to his of the 27th. instant, and he acknowledged receipt of \$5.75 which I remitted, in order to obtain one automatic speaker which he says has send same to me, but I have not received it yet. He has not answered my letter. I don't know why, therefore I address this one to you in order that you may see about it. I have seen our Postmaster of Tampa, and nothing has come for me. For the above amount he was to send also one long flexible connection, and he says in his letter has sent it, also not received.

Mr. Federico Arnavat has also sent you an order of seventy dollars, and I have \$19.40--in this amount and has never received any answer or the goods, and Arnavat wrote this letter on the 26th. last month. I wish to say to you that I would like very much to do business with you, and as I am going to Cuba very soon, I will be able to introduce your goods, and I want you to be square with me.

I am in hope of receiving a prompt answer, and I am,

Yours truly,

(Signed) Jesus Riera

10th. Ave. 1617
Ybor City,
Florida.

[ATTACHMENT]

Waynesburg, Pa. Feb. 22, 1899.

National Phonograph Co.

Gent:-

Sometime in Jan I sent \$11.80/100 (eleven dollars and 80/100) to F.M.Prescott, 44 Broad St., Edison Building for phonographic goods . On Jan 25 he receipted for the money saying goods would be shipped promptly. Not hearing further on Feb. 2nd. I wrote and again on Feb 15 wrote to him but can hear nothing from him and never received the goods. He sent me your Catalogue with his name printed on as agent and also quite a lot of other advertising matter all in good shape. I have bought of Hawthorne & Sheble since Nov. 1st. fine Phonographs and over two hundred dollars worth of Phonographic goods and sent this sample order to Prescott as he advertised some special records.

Respect.

Signed W.T.Hays

Box 134.

[ATTACHMENT]

Cornelius Van Cott, Esq.,
Postmaster,
New York City, N.Y.

Dear Sir:-

My attention has recently been called to the fact that one F.M.Prescott, Edison Building, 44 Broad St., New York, has been circularizing and advertising throughout this and other countries that he is my agent for the sale of phonographs, records, etc.etc. The young man did some time ago handle some of the products of my different establishments, but his business methods were so loose that we were compelled to cut him off entirely. He formerly operated under the name of "Edison Phonograph Agency", but had no right whatever to use the name, never having been authorized to do so by me or any of my representatives. I have recently received some letters from foreign countries calling my attention to the fact that people who sent him monies had received nothing in return for them, and one of the parties who has written me advised that he had written the Chief of Police of New York City to look into the matter. I consider that the young man is using the mails to further his own ends and to hurt my very good reputation. I would like to know from you if it is not possible for you to arrange to divert all mail addressed to the "Edison Phonograph Agency", New York, to the Company who has the right from me to handle the phonograph business; this Company is the National Phonograph Co., 26th.St.& Broadway, New York. I feel satisfied that this man Prescott is injuring my business very materially, and it is absolutely imperative that I take steps at once to estop him from using my name in the conduct of his business. I understand that he now advertises himself as "F.M.Prescott, Successor to the Edison Phonograph Agency".

I have recently had occasion to bring to the notice of the Postal Authorities in Chicago the fact that a party by the name of Henschel, operating as the "Edison Phonograph Co." has been using my name in connection with his business, although he never purchased from my interests or myself. I want to see if something cannot be done towards suppressing the business in New York City also, and I must of course have the co-operation of your Department in order to accomplish this object. I should be very pleased to have any suggestions that you may have to offer and I can assure you that I will have my counsel take the matter up vigorously, but I feel that it is necessary that I should have your co-operation before anything ~~is~~ can be done.

I shall be very pleased to hear from you as to this matter at your convenience.

Yours very truly,
(Signed) THOMAS A. EDISON.

P.S? To give you an idea of what this party is doing, I enclose a letter that has been received by one of my Companies, the National Phonograph Co., 26th.St.& Broadway, New York, from W.T.Hays, Waynesburg, Pa., dated Feb.22nd. Will you kindly return this to me when you are through with it; as if I am compelled to bring suit against this gentleman I shall of course require this letter for use in connection with same.

[ATTACHMENT]

Mr. Thomas A. Edison,

Orange, N. J.

My dear Sir:-

I duly received your favor of the 28th. ultimo, in regard to business carried on at 44 Broad Street, this City, by Mr. F. M. Prescott, under the title of "Edison Phonograph Agency", and advising me that Mr. Prescott has no authority to use the above mentioned title, and requesting that all the mail received at this office directed as above described should be delivered to the National Phonograph Co. at Broadway and 26th. Street, New York.

In reply I have to say that Mr. Prescott has furnished me with a written statement in regard to his use of the above named title, by which it appears that he was engaged in business during 1897 under the name of "Edison Phonograph Agency", by and with the consent of the Manager of the National Phonograph Co.; that about May, 1898, he entered into co-partnership with one C. E. Stevens to continue business under the same title and at the same address, 44 Broad Street, N. Y., that subsequently the co-partnership was dissolved and by mutual consent Mr. Prescott was to liquidate the affairs of the defunct Agency, that he is so engaged at the present time; that he is not now advertising or using and has not advertised under or used the title "Edison Phonograph Agency" since the dissolution of the co-partnership, and that the only business now carried on under that name is such as relate to the former business of the Agency. He also advises me that he would be unable to successfully terminate or wind up the affairs of the Agency should the mail so addressed be diverted from him and he desires such mail delivered to him as formerly. I have accordingly directed that all mail directed to the Edison Phonograph Agency shall be delivered as formerly at 44 Broad St., in accordance with the regulations of the Post Office Department. You have, however, recourse to the courts to test the right or authority of Mr. Prescott to the alleged unauthorized use of the name "Edison" in connection with his business, and should you succeed in restraining him by injunction or otherwise from the use of the name "Edison", the order of the Court will be respected at this office.

I am,
Very respectfully,
C. Van Cott,
Postmaster.

[ATTACHMENT]

Georgetown, Demorara,
C/o General Post Office,
April 17th., 1899.

C. E. Stevens, Esq.

Dear Sir:-

This is a matter I wish to place before you, which perhaps you can assist me in getting through.

I wrote to F.M.Prescott some time in December, sending him a small order for \$13.05 for a Standard. He wrote me acknowledging the money and mentioned that the Standard could not be sent, but would send me an Eagle instead. I replied that although I am not in favor of the Graphophone, I would have to be contented with it; but up to this date, I have not heard one word from him and it is now close on 4 months. These sort of doings bring Mr.Edison's business to disrepute, having unreliable men as agents. I do not intend to let this matter drop. If I can do nothing else, I would let it be known through public print, to shield honest men from such a trap. This order I would have sent you through Elias of 7 Lombard Street, but I got your letter of advice too late.

I am Sir,

Yours respectfully,

R.A.Couzins.

P.S. If anything can be done, please send me the am \$7.50, 1 doz.records \$5.00 I shall be thankful to you by so doing. You know money is not easily got and to be swindled out of hard cash is too bad.

[ATTACHMENT]

Galveston, Texas, 11/21/98.

Dear Sir:-

The Kinetoscope you shipped me was not an Edison which I expected and it is an imposition on your part if you do not refund me the Express charges which the Express Co. withholds from me out of the 5.00 I deposited with them here as a guarantee to you that I would accept the above. It is unjust for you to expect me to accept what I did not order. I had confidence that Edison would not turn out something unless it was good & that you shipped me was a Washingtons Firms goods whose name was on the same with whom I corresponded with & would not order from & the same is no good & not in complete condition I am to angry to write more having been imposed upon by you as above I take it as a cheap lesson that I will never order again without privilege of inspection before paying anything.

Yours truly,

A. W. Sammols.

Postal Card Addressed to-

The Edison Phonograph Agency,

Mr. F. M. Prescott, Mgr.,

New York, N.Y.

[ATTACHMENT]

WESTERN UNION TELEGRAPH COMPANY,

21,000 offices in America.

Cable service to all the world.

Received at the Western Union Building, 195 Broadway, N.Y.
53EX IM EP COPY BR 9 Paid.

GRAND FORKS ND Oct 29-98.

THOS. A. EDISON,

44 BROAD ST.,

NEW YORK.

IS MY LETTER NOT WORTH A REPLY ANSWER QUICK.

H. S. REYKJALIN.

125 4PM.

(Stamped with rubber stamp over the face of the telegram)

"RECEIVED FROM 16 BROAD STREET"

End

[ATTACHMENT]

State of New Jersey :
 ;ss
 County of Essex :

WILLIAM E. GILMORE being duly sworn

according to law on his oath says; I am the General Manager
of the Edison Phonograph Works and am entirely familiar with
the phonograph business, and have been so for ^{the last five} many years.

I am acquainted with Frederic M. Prescott. In the year
eighteen hundred and ninety-eight he did business in the
Edison Building No. 44 Broad Street in the City of New York,
and the name on the door of his office was "The Edison Pho-
nograph Agency, F.M.Prescott, Manager". Since about the
first of January, eighteen hundred and ninety-nine he has
changed that, and the sign now is "F.M.Prescott, Successor
to the Edison Phonograph Agency". He still carries on
business under that name.

Sworn to and subscribed :
before me this 29th day :
of May A.D., 1899 :
at West Orange, N.J. :

William E. Gilmore

J. F. Randolph
Notary Public for New Jersey

(L.S.)

[ATTACHMENT]

State of New York :
County of New York : ss. *Camilo Andrew* being
duly sworn according to law on his
oath says that the printed circular marked Schedule "F" was
obtained by him from the office of F. M. Prescott, No. 44
Broad Street, in the City of New York on the *21st* day of
June instant and that the printed circular marked Schedule
"G" ^{*has been removed*} was obtained by him from the said office of F. M. Prescott
on the *21st* day of June instant; that both of
said circulars were given out from the said office in the or-
dinary course of trade.

Sworn to and subscribed this :
24th day of June, A. D. 1899 :
before me a Notary Public of : *Camilo Andrew*
the State of New York at New : *157 West 100 St. Basement*
York. *County* :
John F. Jones
(L.P.)

IN CHANCERY OF NEW JERSEY.

B E T W E E N - :
THOMAS A. EDISON, :
Complainant, : O N B I L L & C.
-AND- : A N S W E R.
FREDERICK M. PRESCOTT, :
Defendant. :

The answer of Frederick M. Prescott to the Bill of Complaint of Thomas A. Edison, Complainant.

This defendant for answer to said Bill, or to so much thereof as he is advised it is material or necessary for him to make answer unto, answering says:

First: This defendant admits that the complainant is an inventor by profession, and is engaged in the manufacture of various articles, and has taken out patents in the United States and other countries, and is well known throughout the business and the scientific world, as stated in said Bill. He believes that the said complainant invented the phonograph, a machine for recording and reproducing sound, and believes that the complainant took out a patent for the said invention in the United States, and perhaps in other countries. He believes that the complainant has invented many improvements thereon, and has taken out patents for such improvements; but whether the number was large or not, the defendant does not know and cannot answer as to his belief or otherwise. This defendant does not know whether the use of the complainant's name in connection with any manufactured article

IN CHANCERY OF NEW JERSEY.

B E T W E E N -
THOMAS A. EDISON,
Compl't.,
-AND-
FREDERICK M. PRESCOTT,
Def't.

O. M. B. I. J. & C.
A N S W E R.

Collie & Swayze, Atty's.,
of Defendants.

enhances the value of that article in the popular mind, and he does not know whether the patents taken out by the complainant covering inventions in regard to the phonograph are owned by him personally or whether by corporations he has organized for the purpose of manufacturing and selling the phonograph and materials and supplies connected with it. This defendant denies that the complainant is owner of the majority of the capital stock of said corporations. He admits that the business of manufacturing and selling phonographs and supplies therefor is a large and profitable business, and he believes it is increasing daily; but does not know whether the complainant derives large profits from the same, and leaves the complainant to make such proof thereof as he may be advised or may be able to make.

92

This defendant does not know to what extent, if at all, the complainant is engaged in his laboratory at West Orange in experimenting with the phonographs and improvements thereon, nor whether he has in his employ a large number of men engaged in the same occupation. He denies that the large part of the value of the business of selling phonographs and supplies therefor consists in the use of the complainant's name in connection therewith; and he denies that the said phonographs and supplies are to a large extent purchased by the public because they are known to be inventions of the complainant, and manufactured by the complainant or the companies and corporations identified with and controlled by the complainant, and he avers the truth to be that a certain kind of phonograph is well

known on the market by the name of the Edison Phonograph, which name signifies a peculiarly constructed phonograph, and has been in common use for many years as designating a phonograph of that particular construction.

Second: This defendant denies that the complainant in any proper sense ever maintained an office in the Edison Building, on Broad Street, in New York City, and avers the truth to be that for a time the complainant's name was on the Directory of the Edison Building on the ground floor as Thomas A. Edison, Seventh Floor, Room 2; that while the said Edison's name was on the said Directory, the said Edison did not even have a desk or chair in the building; that the seventh floor, and the whole of it, during the time that Mr. Edison's name was on the Directory was the offices of the General Electric Company, and that Edison did not during all the time his name was on the Directory visit the building oftener than once a month. This defendant admits that some time about the year Eighteen hundred and ninety four, he became engaged in the business of buying and selling phonographs and supplies therefor; that at first his business was carried on in a small way while he was in the employ of the General Electric Company; that he was in the employ of the Thomson-Houston International Electric Company from Eighteen hundred and ninety-two until its consolidation with the General Electric Company in 1893 or 1894, and from thence in the employ of the General Electric Company, having charge of the New York Office of their foreign department until some time in the year 1897, when he left their employ and

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went into business for himself, and during all the time from 1892 continuously until the present time, this defendant had his place of business and office in the said Edison Building, which now belongs, and has belonged since 1892, to the General Electric Company.

This defendant admits that his business increased, and that in 1897 he started in business on a larger scale, having an office in the Edison Building, in charge of his brother Mohn O. Prescott. He admits that some time in the year 1897 or 1898 he adopted the name of the Edison Phonograph Agency, and avers that he did so with the knowledge and consent of the Edison Phonograph Works, the manufacturers of the Edison phonographs, and of the National Phonograph Company, the selling agents in the United States, of the Edison Phonographs; and that he adopted such name at the suggestion of William E. Gilmore, who was the General Manager of the Edison Phonograph Works, and of the National Phonograph Company. He denies that the selection of the Edison Building for his office, and the use of the term "Edison Phonograph Agency" were either of them made for the purpose of enabling him to get hold of letters or telegrams that might be sent to complainant addressed to the Edison Building, or for the purpose of intercepting persons who might call at the said building to inquire for the complainant; that his relations with the Edison Phonograph Works, the company of the complainant's at West Orange, manufacturing phonographs at West Orange, and the National Phonograph Company, the selling

9 cases known of it

agents for the said phonographs, were very close and confidential; that he was given by them an extra discount upon goods bought, and that they availed themselves of sales to him and gave him special favors for the reason that neither Mr. Edison nor the Edison Phonograph Works, nor the National Phonograph Company could legally sell phonographs for export to foreign countries, and as the business of this defendant was almost altogether an export business, sales made to him in this country did not affect to any appreciable extent the domestic trade of the said Edison Phonograph Works and the said National Phonograph Company, but enabled those companies to increase their sales to the extent that the goods bought of them by this defendant were exported, and that the said Thomas A. Edison was largely interested both in the Edison Phonograph Works, and the National Phonograph Company, was a large stockholder in each concern, and that his profits were largely increased by the sales made to this defendant, so that a practice grew up of having mail, which was sent to West Orange addressed to Mr. Edison or to the Edison Phonograph Works or to the National Phonograph Company relating to or containing orders for phonographs or supplies for export, sent to this defendant to be filled, and, in return, with the knowledge and consent of the Edison Phonograph Works at West Orange, and the National Phonograph Company, and Mr. Edison this defendant opened occasionally telegrams or cablegrams and letters addressed to Thomas A. Edison at the Edison Building, and repeated them by tele-

W.R. Bond

AND

phone or sent them by mail, as necessity required, to the Edison factories at West Orange; that this course of business was well known to, and approved by, all parties, and that no one ever objected to the same until some time in the Fall of 1898; and as soon as objection was raised, the practice was discontinued by this defendant.

And this defendant denies that he, at any time, attempted to defraud any persons; and he denies that he ever represented himself as the said Thomas A. Edison's agent, except in replying to letters delivered to him to be answered on Mr. Edison's behalf by William E. Gilmore and representatives of Mr. Edison or of some of his various corporations at Orange, New Jersey. This defendant says that he sent notice to the Edison Manufacturing Company and the National Phonograph Company in the Spring of 1898 that he had changed his business name to the name of the Edison Phonograph Agency, and asked them to change the account on their books, which they accordingly did; but his use of the name Edison Phonograph Agency had been known to them long previous, and the Edison Phonograph Works, Edison Manufacturing Company and National Phonograph Company had caused circulars and catalogues to be printed in accordance with their regular forms of catalogues and circulars, and by their own printer, which contained the name and address of the Edison Phonograph Agency, F.M. Prescott, Manager, Edison Building, New York, and upon some of said circulars and catalogues was printed by the Edison Phonograph Works or the National Phonograph Company the words "trade mark", with a fac-simile of Thomas Edi-

*MS of
for statement*

son's signature; and that while this defendant cannot say with certainty whether Mr. Thomas A. Edison knew of this fact, it is nevertheless true that Mr. William E. Gilmore, who was Mr. Edison's General Manager at West Orange, and had the principal charge of Mr. Edison's business there, knew of it and approved of it, and that both the Edison Manufacturing Company, which was a company manufacturing electrical supplies and controlled by Mr. Edison, and the National Phonograph Company, which was also controlled by Mr. Edison, rendered bills to this defendant under the name of the Edison Phonograph Agency, and shipped goods to him under that name, and that drafts for money sent from foreign countries, payable to the order of Thomas A. Edison, were turned over by the Edison Phonograph Works at West Orange, or the National Phonograph Company or the Edison Manufacturing Company, to this defendant, and the money was drawn by this defendant, and the orders filled by this defendant; that some times in replying to letters addressed to T. A. Edison, this defendant may have stated substantially that "Your letter addressed to T. A. Edison has been handed to me for reply, whose agent I am," or words to that effect, and in every case in which that language was used, it was used to explain the reason for this defendant's replying to a letter addressed to Mr. Edison; and that as soon as objection was made by Mr. Edison, this defendant immediately discontinued the practice.

With reference to the complaint from Jesus Riera,

*Manager
of Edison
Co.*

*only have the
drafts that
account for*

mentioned in the complainant's Bill, this defendant states the fact to be that on or about October 7, 1898, he received an order from the said Jesus Riera for one Edison Automatic Speaker and one flexible connection; that the goods were shipped to the said Riera on October 24th. by mail; that they amounted in value to about five dollars and seventy five cents; that the delay in shipment was due to the fact that this defendant had placed the order for the same with the National Phonograph Company in the regular course of business, and that after repeated requests by telephone and in person to W.E. Gilmore, General Manager, and one J.R. Schermerhorn, Assistant Manager, of the Edison Phonograph Works at West Orange, they declined to furnish him with the goods, so that he was obliged to obtain them from another source, and shipped them on October 24th. seventeen days after receipt of the order, which delay is not an extraordinary delay.

As to the order of Federico Arnavat, this defendant says that Mr. Arnavat was a regular customer of this defendant; that he had sent him many orders addressed to this defendant personally, and that the checks for the money had always been payable either to this defendant personally or to the Edison Phonograph Agency, and he denies that the said Federico Arnavat ever sent an order to complainant for a phonograph and supplies which was received and appropriated by this defendant; and he avers that all moneys sent to him by Arnavat were in payment for goods sold and shipped by this defendant to said Arnavat.

Third: This defendant admits that sometime in October, 1898, a telegram was received at the Edison Building, which, as this defendant now recollects, was receipted for by the General Electric Company, who handed the telegram to this defendant in accordance with the usual course of business; that it had been the custom of this defendant to repeat to Mr. Edison in Orange by telephone or telegram, any telegrams or cablegrams; that as this defendant now recollects, the telegram was received on a Saturday, October 29th; that this defendant knew that the Works at West Orange would not be open at that time, and, as the telegram did not seem important, he placed it in an envelope immediately and mailed it to Mr. Edison. This defendant says that he opened the said telegram and mailed it in the ordinary course of business as he had been accustomed to do. This defendant denies that he opened said telegram with the idea that it contained a telegram in connection with the sale of phonographs, and he denies that he has opened any telegrams to the complainant without repeating them over the telephone or by telegraph, or sending them by mail to the complainant.

Fourth: This defendant knows nothing about a postal card from A.W. Samuels, mentioned in the Complainant's Bill, but he says, that on the complainant's own showing, the said postal card was the property of this defendant, and should have been sent to this defendant instead of being retained by the said complainant; that the address of Phonograph Agency, F.M. Prescott on the said postal card was ample notice to the said complainant that the said

postal card was not his property, and that he should have notified this defendant of the receipt of the same at once; that this defendant knew nothing of it until he read the Bill of Complaint in this cause. As to the complaint contained in the said postal card, the facts are these: That this defendant received an order from the said Samuels for a parlor kinetoscope, which this defendant sent to him; that this defendant never claimed in any way that the kinetoscope was of Edison Manufacture, and upon Samuels refusing to accept the kinetoscope, this defendant took it back, although it was exactly what this defendant had advertised.

Fifth: This defendant admits that the complainant requested this defendant to discontinue the use of the complainant's name in connection with his business, and from holding himself out to be the complainant's agent. He admits writing the letter of December 12th., a copy of which is attached to the complainant's Bill, and he avers the truth to be that he had never, except as herein stated, used the name of Mr. Edison in any way except under the name of Edison Phonograph Agency under the circumstances above set forth; and that immediately after receiving Mr. Edison's request, he ceased using the name of the Edison Phonograph Agency, except so far as it might have been upon stationery already printed, only a small portion of which was still on hand, and except also in the use of the words "F.M. Prescott, Successor to Edison Phonograph Agency" upon the door of his office and on the directory of the Edison Building; that it was necessary for this defendant

to retain the said name in the settling up of the business of a co-partnership between this defendant and one Charles E. Stevens, and in order that he might receive the mail intended for the said co-partnership. And this defendant avers that he has the right to use the name of the Edison Phonograph Agency; that that name was originally adopted by him in 1897 as above stated with the knowledge and consent of the complainant's companies, the Manufacturers and General Sales Agent of the Edison phonographs; that in May, 1898 this defendant formed a co-partnership with Charles E. Stevens, and did business under the name of the Edison Phonograph Agency; that under that name, while he was alone and while he was in partnership with the said Stevens, he purchased and sold Edison Phonographs amounting to the sum of fifteen thousand dollars monthly; that phonographs were shipped, bills rendered and letters written to the Edison Phonograph Agency under that name by the Edison Manufacturing Company and National Phonograph Company, and that he was supplied with catalogues and advertising matter by said companies, or some, or one of them, bearing the name "Edison Phonograph Agency, F.M. Prescott Manager" with a fac-simile of the complainant's signature thereon; and that the arrangements between himself and the Edison Manufacturing Company and the National Phonograph Company were entirely satisfactory until the month of August 1898 when, on account of the profitable business which had been built up by this defendant in the export trade in phonographs, the said Thomas A. Edison, William E. Gilmore, his General Manager, and Charles E.

Stevens, while this defendant was temporarily in Europe, combined together to break up the defendant's business, to ruin the defendant, and to secure the profits of the said business for themselves, and to sell phonographs for export under the name of Charles E. Stevens in order to avoid the contractual obligation which the said Thomas A. Edison was under not to sell phonographs for export; that this defendant and the said Stevens, doing business under the name of the Edison Phonograph Agency at the Edison Building, 44 Broad Street, dissolved partnership on the twelfth day of September, Eighteen hundred and ninety-eight, a copy of the dissolution agreement is hereto annexed marked Schedule 1, and made part hereof; and that the said Charles E. Stevens, in consideration of Twelve Hundred and Eighty-one Dollars and fifty-five cents, then and there paid to him by this defendant, transferred to this defendant all his interest in the assets of the firm, a copy of the said assignment being hereto annexed, marked Schedule 2., and made part hereof; that prior to the dissolution of the said firm, the said Stevens had made arrangements to enter into business himself in competition with this defendant, and had actually taken steps to that end prior to the dissolution; that since the dissolution of the partnership, the said Stevens has carried on the business of selling phonographs, electrical apparatus and supplies, on the same floor of the Edison Building with this defendant, and on the floor below and in direct competition with him; that the said Stevens has been assisted in his said business by the complainant, and this defendant charges that the com-

plainant has a personal interest in the business of said Stevens, and is really the responsible party back of it, or one of the responsible parties back of it, and is maintaining the said business in the name of the said Stevens in order that he may sell phonographs for export outside of the United States and evade his contractual liabilities above mentioned; that the said Stevens maintained upon his office door the words "Edison Phonograph Agency" after the dissolution of the co-partnership between this defendant and the said Stevens, and continuously up until some time after the correspondence between the complainant and Postmaster Van Cott, set forth in the complainant's bill; and this defendant charges that the said name "Edison Phonograph Agency" was maintained by the said Stevens upon his office door with the knowledge and consent of the said complainant, and in the hope that the said Stevens might thereby ~~xxx~~ obtain mail matter intended for this defendant, and that the said name "Edison Phonograph Agency" was removed from the said Steven's office only after the failure of the complaint to divert all mail addressed to the Edison Phonograph Agency to the National Phonograph Company.

SIXTH: This defendant denies that he has sent out catalogues of phonograph records and supplies in the Spanish language in which he advertises himself as the Edison Phonograph Agency, and says that if any such catalogues were sent out it was only catalogues that were printed before the correspondence with Mr. Edison hereinbefore referred to

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Allegations
it is agreed
to stop*

SEVENTH: This defendant further answering says that as to the complaint said to have been made by W.T. Hayes, the facts are these: This defendant received an order from the said Hayes on or about January 26, 1899; that one of the articles ordered was a part of an Edison phonograph; that it was impossible for the defendant to secure the said part from the National Phonograph Company or from the Edison Phonograph Works, and that it took some time to procure the same, but the order was filled and the goods shipped to the said Hayes on February 27, 1899, which was not an unusual delay; that the whole amount of the said order from W.T. Hayes was Eleven Dollars and Eighty Cents.

EIGHTH: This defendant admits that the complainant wrote to the Postmaster of the City of New York requesting the postal authorities of that city to take some means to prevent the delivery of letters to this defendant, and that the complainant received a letter from the Postmaster of New York substantially as stated in his said bill. And this defendant avers that since the refusal of the Postmaster of New York to deliver to the complainant mail intended for this defendant, and addressed to the Edison Phonograph Agency, the said complainant, or the National Phonograph Company, under his direction and at his suggestion, has caused to be opened a business place for the sale of phonographs at 174 Fifth Avenue, in the City of New York, and has adopted as a business name for said office the name "Edison's Phonograph Agency", and that the said complainant and the said National Phonograph Company have entrusted to the said Edison's Phonograph Agency, at 174

See 77/13

*This is 20000
to make*

Fifth Avenue, the entire retail trade in phonographs in New York City, and that they adopted the name "Edison's Phonograph Agency" for the purpose of deceiving the public and of securing an unfair advantage of this defendant, and filching from this defendant his right to the name of Edison Phonograph Agency.

NINTH: This defendant further answering says as to the alleged complaint of B.A.Cousins, of Georgetown, Demora, this defendant says that he knows of no such man, and supposes the person intended is B.A.Causius; that with reference to Mr.Causius the facts are these; On January 4, 1899, an order was received from him, accompanied by Thirteen Dollars and Five Cents (\$1305); that the order was not clear, and this defendant wrote to the said Causius for further information; that the said Causius wrote to him on March 15, 1899, agreeing to take a graphophone in place of the phonograph which had been ordered; that there was some delay in filling the order, but the order was finally filled on May 30th; and that this defendant has had no complaint from the said Causius since that time.

TENTH: This defendant denies that he is unlawfully using the complainant's name in connection with his said business in any way, and he denies that he is in any way deceiving the public, or is inducing the public to believe that this defendant is an agent of the complainant, and he denies that he is receiving money from the public and not furnishing them goods ordered and paid for by them, and denies that he is not conducting his business in a proper way, and denies that his conduct of his business tends in any

way to bring the complainant's name and business into disrepute with the public, and he says that the complaints set forth in the complainant's bill to that effect are trivial in amount and in view of the magnitude of your defendant's business are insignificant and no more than are likely to arise in any large business, and this defendant says that so far from this defendant bringing the complainant's name into disrepute or injuring his business, the fact is that the complainant has been greatly benefited in the sale of phonographs and other supplies by the advertisement of the same by defendant's business activity, and at the defendant's expense.

ELEVENTH: And this defendant further answering says that while in order to avoid a litigation and a conflict with the complainant, and to avoid even seeming to desire to use the complainant's name, this defendant was willing upon the request of the complainant to cease using the name of Edison Phonograph Agency, except as already stated, and had actually ceased the use of the same, except as stated, he still insists that he had and has a valid right to the use of that name, and that the complainant's conduct is planned and calculated to deprive this defendant of the valuable property which he has built up in the name of Edison Phonograph Agency at large expense.

And this defendant prays to be hence dismissed with his reasonable costs and charges in this behalf most wrongfully sustained.

Collie & Swayze
Solicitors of defendant.
Francis J. Swayze
of Counsel.

SCHEDULE L

AGREEMENT OF DISSOLUTION.

By mutual consent of the parties to the annexed agreement between Frederick M.Prescott and Charles E. Stevens, dated May 11th.,1898, the partnership thereby formed is wholly dissolved.

Frederick M.Prescott only is authorized to sign in liquidation.

IN WITNESS WHEREOF we have hereunto set our hands this twelfth day of September, 1898

J.D.Gonell

F.M.Prescott,

C.E.Stevens.

18.

SCHEDULE 2.

In consideration of the sum of one thousand two hundred and eighty one and 55/100 dollars (\$1281.55) the receipt of which is hereby acknowledged, I hereby assign, transfer and set over to Frederick M. Prescott, all my interest in the assets of the firm consisting of said Prescott and myself, doing business as the "Edison Phonograph Agency" which was dissolved by mutual consent on September twelfth 1898; the above sum of one thousand two hundred and eighty one and 55/100 dollars (\$1281.55) being received by me in full satisfaction of my interest in said firm, and all claims of mine against said Prescott.

Dated New York,

C.E. Stevens, (L.S.)

September 12 1898.

Witness

J.D. Gonnell.

State of New Jersey:

:SS.

County of Essex : FREDERIC M. PRESCOTT being duly sworn
: on his oath according to law says; that he is the defendant
: above named; that he has read the foregoing answer; that
: the statements therein contained so far as relates to his
: own acts are true and so far as relates to the acts of others
: he believes them to be true; that it is true that sometime
: about the year 1894, he became engaged in the business of
: buying and selling phonographs and supplies therefor; that
: at first his business was carried on in a small way while he
: was in the employ of the General Electric Company; that he
: was in the employ of th, Thomson-Houston International Elec-
: tric Company from 1892 unyil its consolidation with the Gen-
: eral Electric Comperny in 1893 or 1894, and from thence in
: the employ of the General Electric Company, having charge of
: their New York Office of their Foreign Department unfil some
: time in the year 1897, when he left their employ and went
: into business for himself, and during all the time from 1892
: continuously until the present time, this defendant had his
: place of business and office in the said Edison Building,
: which now belongs, and has belonged since 1892 to the General
: Electric Company; that his business increased and that in
: 1897 he started in business on a larger scale, having an
: office in the Edison Building, in charge of his brother,
: John O. Prescott; that some time in the year 1897, he adopted
: the name of the Edison Phonograph Agency, and did so with
: the knowledge and consent of the Edison Phonograph Works the
: manufacturers of the Edison Phonographs and of the National
: Phonograph Comperny, the selling agents in the United States,
: of the Edison Phonographs, and that he adopted such name at

the suggestion of William E. Gilmore, who was the General Manager of the Edison Phonograph Works, and of the National Phonograph Company; that the selection of the Edison Building for his office, and the use of the term "Edison Phonograph Agency" were not nor was either of them for the purpose of enabling him to get hold of letters or telegrams that might be sent to complainant addressed to the Edison Building, or for the purpose of intercepting persons who might call at the said building to inquire for the complainant; he says that his relations with the Edison Phonograph Works, the company of the complainant, manufacturing phonographs at West Orange, and the National Phonograph Company, the selling agents for the said phonographs, were very close and confidential; that he was given by them an extra discount upon goods bought, and that they availed themselves of sales to him and gave him special favors for the reason that Mr. Edison nor the Edison Phonograph Works, nor the National Phonograph Company could legally sell phonographs for export to foreign countries, and as the business of this defendant was almost altogether an export business, sales made to him in this country did not affect to any appreciable extent the domestic trade of the said Edison Phonograph Works and the said National Phonograph Company, but enabled those companies to increase their sales to the extent that the goods bought of them by this deponent were exported and that the said Thomas A. Edison was largely interested both in the Edison Phonograph Works and the National Phonograph Company, was a large stockholder in each concern, and that his profits were largely increased by the sales made to this deponent.

*No more
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of this*

of this

ont, so that a practice grew up of having mail, which was sent to West Orange addressed to Mr. Edison or to the Edison Phonograph Works or the National Phonograph Company, relating to or containing orders for phonographs or supplies for export sent to this deponent to be filled, and in return, with the knowledge and consent of the Edison Phonograph Works at West Orange, and the National Phonograph Company, and Mr. Edison, this deponent opened occasionally telegrams or cablegrams and letters addressed to Thomas A. Edison at the Edison Building, and repeated them by telephone or sent them by mail, as necessity required, to the Edison factories at West Orange; that this course of business was well known to, and approved by all parties, and that no one ever objected to the same until some time in the Fall of 1898; and as soon as objection was raised, the practice was discontinued by this deponent and has never been resumed; that this deponent never represented himself as the said Thomas A. Edison's Agent, except in replying to letters delivered to him to be answered on Mr. Edison's behalf by William E. Gilmore and representatives of Mr. Edison or of some of his various corporations at Orange, New Jersey; that this deponent sent notice to the Edison Manufacturing Company and the National Phonograph Company in the Spring of 1898 that he had changed his business name to the name of the Edison Phonograph Agency, and asked them to change the account on their books, which they accordingly did; but his use of the name of Edison Phonograph Agency had been known to them long previous, and the Edison Manufacturing Company and the National Phonograph Company has caused circulars and catalogues to be printed in

accordance with their regular forms of catalogues and circulars, and by their own printer, which contained the name and address of the Edison Phonograph Agency, F.M.Prescott, Manager, Edison Building, New York; and upon some of said circulars and catalogues there was caused to be printed by the Edison Manufacturing Company or the National Phonograph Company the words, "trade mark" with a fac-simile of Thomas Edison's signature; that Mr.William E.Gilmore, who was Mr. Edison's General Manager at West Orange and had the principal charge of Mr.Edison's business there, knew of the transactions and approved of it, and that both the Edison Manufacturing Company, which was a company manufacturing electrical supplies and controlled by Mr.Edison, and the National Phonograph Company, which was also controlled by Mr.Edison, rendered printed bills to this defendant under the name of the Edison Phonograph Agency, and shipped goods to him under that name, and that drafts for money sent from foreign countries, payable to the order of Thomas A.Edison were turned over by the Edison Phonograph Works at West Orange or the National Phonograph Company or the Edison Manufacturing Company, to this defendant, and the money was drawn by this defendant, and the orders filled by this defendant; that sometimes in replying to letters addressed to T.A.Edison, this defendant may have stated substantially that "Your letter addressed to T.A.Edison has been handed to me for reply, whose agent I am," or words to that effect, and in every case in which that language was used, it was used to explain the reason for this defendant's replying to a letter addressed to Mr.Edison and that as soon as objection was

made by Mr. Eaton, this deponent immediately discontinued the practice; with reference to the complaint from Jesus Riera, mentioned in the complainant's bill, this deponent states the fact to be that on or about October 7, 1898, he received an offer from the said Jesus Riera for one Edison Automatic Speaker and one flexible connection; that the goods were shipped to the said Riera on October 24th. by mail; that they amounted in value to about Five Dollars and Seventy five cents; that the delay in shipment was due to the fact that this deponent had placed the order for these with the National Phonograph Company in the regular course of business, and that after repeated requests by telephone and in person to W.E. Gilmore, General Manager, and one J.R. Schermerhorn, Assistant Manager of the Edison Phonograph Works, at West Orange, they declined to furnish him with the goods so that he was obliged to obtain them from another source, and shipped them on October 24th, seventeen days after receipt of the order, which delay is not an extraordinary delay. As to the order of Frederico Arnavat, this deponent says that Mr. Arnavat was a regular customer of this deponent; that he had sent deponent many orders addressed to this deponent personally, and that the checks for the money had always been made payable either to this deponent personally or to the Edison Phonograph Agency, and that the said Frederico Arnavat never sent an order to complainant for a phonograph and supplies which was received and appropriated by this deponent; that all moneys sent to him by Arnavat were in payment for goods sold and shipped by this deponent to said Arnavat; that some time in October 1898, a telegram

was received at the Edison Building, which, as this deponent now recollects, was receipted for by the General Electric Company, who handed the telegram to this deponent in accordance with the usual custom of business; that it had been the custom of this deponent to repeat to Mr. Edison in Orange by telephone or telegram any telegrams or cablegrams; that, as this deponent now recollects, the telegram was received on a Saturday, October 29th; that this deponent knew that the Works at West Orange would not be open at that time, and as the telegram did not seem important, he placed it in an envelope immediately and mailed it to Mr. Edison; that he opened the said telegram and mailed it in the ordinary course of business as he had been accustomed to do; that he did not open said telegram with the idea that it contained a telegram in connection with the sale of phonographs, and he has not opened any telegrams to the complainant without repeating them over the telephone or sending them by mail to the complainant. That this deponent knew nothing of the postal card from A. W. Samuels until he read the Bill of Complaint in this cause. As to the complaint contained in the said postal card, the facts are these; that this deponent received an order from the said Samuels for a parlor kinetoscope, which this deponent sent to him; that this deponent never claimed in any way that the kinetoscope was of Edison manufacture, and, upon Samuels refusing to accept the kinetoscope, this deponent took it back, although it was exactly what this deponent had advertised. That this deponent has never, except as herein stated, used the name of Mr. Edison in any way except under the name of Edison Phonograph

Agency under the circumstances above set forth; that immediately after receiving Mr. Edison's request, he ceased using the name of the Edison Phonograph Agency, except so far as it might have been upon stationery already printed, only a small portion of which was still on hand, and except also in the use of the words, "F.M. Prescott, Successor to Edison Phonograph Agency" upon the door of his office, and on the directory of the Edison Building; that it was necessary for this deponent to retain the said name in the settling up of the business of a co-partnership between this deponent and one Charles E. Stevens, and in order that he might receive the mail intended for the said co-partnership; that the name Edison Phonograph Agency was originally adopted by him in 1897 as above stated with the knowledge and consent of the complainant's companies, the Manufacturers and General Sales Agents of the Edison Phonographs; that in May, 1898, this deponent formed a co-partnership with Charles E. Stevens, and did business under the name of the Edison Phonograph Agency; that under that name, while he was alone and while he was in partnership with the said Stevens, he purchased and sold Edison Phonographs amounting to the sum of Fifteen Thousand Dollars monthly, and was the largest customer of the complainant's companies; that phonographs were shipped, bills rendered and letters written to the Edison Phonograph Agency under that name by the Edison Manufacturing Company and National Phonograph Company, and that he was supplied with catalogues and advertising matter by said companies, or some, or one of them, bearing the name "Edison Phonograph Agency, F.M. Prescott, Manager" with a fac-simile of the complainant's

signature thereon; and that the arrangements between himself and the Edison Phonograph Works and the National Phonograph Company were entirely satisfactory until the month of August, 1898; that this deponent and the said Stevens, doing business under the name of the Edison Phonograph Agency at the Edison Building, 44 Broad Street, dissolved partnership on the twelfth day of September, eighteen hundred and ninety-eight, a copy of the dissolution agreement is annexed to said Bill marked Schedule 1, and made part thereof; and that the said Charles E. Stevens, in consideration of Twelve Hundred and Eighty one Dollars and Fifty-five Cents, then and there paid to him by this deponent, transferred to this deponent all his interest in the assets of the firm, a copy of the said agreement being annexed to said Bill, marked Schedule 2, and made part thereof; that prior to the dissolution of the said firm, the said Stevens had made arrangements to enter into business himself in competition with this deponent; and had actually taken steps to that end prior to the dissolution; that since the dissolution of the partnership, the said Stevens has carried on the business of selling phonographs, electrical apparatus and supplies, on the same floor and floor below of the Edison Building with this deponent, and in direct competition with him; that the said Stevens has been assisted in his said business by the complainant; that the said Stevens placed upon his office door the words "Edison Phonograph Agency" immediately after the dissolution of the co-partnership between this deponent and the said Stevens, and maintained the same continuously up until some

time after the correspondence between the complainant and Post Master Van Cott, set forth in the complainant's Bill; that the said name "Edison Phonograph Agency" was removed from the said Stevens' office only after the failure of the complainant to divert all mail addressed to the Edison Phonograph Agency to the National Phonograph Company; that this deponent has not sent out any catalogues of phonographs records and supplies ~~in~~ in the Spanish language in which he advertises himself as the Edison Phonograph Agency; that as to the complaint said to have been made by W.T.Hayes, the facts are these: This deponent received an order from the said Hayes on or about January 26, 1899; that one of the articles ordered was a part of an Edison Phonograph: that it was impossible for the deponent to secure the said part from the National Phonograph Company or from the Edison Phonograph Works, and that it took some time to procure the same, but the order was filled and the goods shipped to the said Hayes on February 27, 1899, which was not an unusual delay; that the whole amount of the said order from W.T.Hayes was Eleven Dollars and Eighty Cents; that since the refusal of the Postmaster of New York to deliver to the complainant mail intended for this deponent, and addressed to the Edison Phonograph Agency, the said complainant, or the National Phonograph Company, has caused to be opened a business place for the sale of phonographs at 174 Fifth Avenue, in the City of New York, and has adopted as a business name for said office the name "Edison Phonograph Agency" and that the said complainant and the said National Phonograph Company have entrusted

to the said Edison's Phonograph Agency, at 174 Fifth Avenue, the entire retail trade in phonographs in New York City, and that the name Edison's Phonograph Agency is so familiar to deponent's trade name that it is calculated to deceive the public. That as to the alleged complaint of R.A.Cousins, of George town, Demorara, this deponent says that he knows of no such man, and supposes the person intended is R.A.Cauzius; that with reference to Mr.Cauzius the facts are these: On January 4, 1899, an order was received from him, accompanied by Thirteen Dollars and Five Cents (\$13.05); that the order was not clear, and this defendant wrote to the said Cauzius for further information; that the said Cauzius wrote to him on March 15, 1899, agreeing to take a graphophone in place of the phonograph which had been ordered; that there was some delay in filling the order, but the order was finally filled on May 30, and that this deponent has had no complaint from the said Cauzius since that time. This deponent further says that he is not using the complainant's name in connection with his said business in any way except as "Successor to the Edison Phonograph Agency" and says that he is not in any way deceiving the public, or inducing the public to believe that this deponent is an agent of the complainant, and he further says that he is not receiving money from the public and not furnishing them goods ordered and paid for by them, and that he is conducting his business in a proper way, and that his conduct of his business does not tend in any way to bring the complainant's name and business into disrepute with the public, and the fact

is that the complainant has been greatly benefited in the sale of phonographs and other supplies by the advertisement of the same by deponent's business activity and at the deponent's expense.

Sworn and subscribed before me, :
this 14th day of August, 1899. : FREDERICK M. PRESCOTT.

Thomas J. Raymond,
Master in Chancery of
New Jersey.

State of New York :
 County of New York :^{SS}

JOHN O. PRESCOTT, being duly sworn

on his oath according to law, says; I reside in Montclair New Jersey, and am a brother of Frederic M. Prescott. I have been his chief clerk since April 15, 1897, beginning in October 1897. My brother, Frederic M. Prescott, frequently visited the Edison Works at Orange, New Jersey, going as often as once a week, and sometimes oftener, and on each occasion he would bring back with him a list of addresses, most of which were to countries outside of the United States and Canada, some of which were in New York City and others in different localities in the United States. I know that the said Frederic M. Prescott went to the Edison Works at Orange, New Jersey, for I have frequently called him up on the telephone at that place and talked with him over the telephone, and I know that the list of addresses which he brought back from Orange upon these occasions was very frequently in the handwriting of Charles E. Stevens, whose handwriting I am very familiar with. Along with such list of addresses was a date and a line or two relating to the subject, for the most part being orders for goods; that I have frequently written letters to persons named in those lists acknowledging their letter as addressed either to the Edison Works at Orange, or to T.A. Edison; and know that orders have been filled and business done in pursuance of such letters; that after the information of the partnership between said Frederic M. Prescott and Charles E. Stevens in May, 1898, the

said Stevens was in the habit of bringing to the office such addresses and dictating the reply himself. I have seen him bring to our office in New York the identical letters, have heard him dictate answers thereto and seen him take the letters away. The letters which Stevens brought to the office were addressed some to Thomas A. Edison, some to the Edison Phonograph Works and some to the National Phonograph Company. Many of these letters were handed to me to make out orders from, to copy the address into our address books, and to mail catalogues to.

Charles E. Stevens was the General Sales Agent of the National Phonograph Company prior to the formation of the partnership between him and Frederic M. Prescott in May 1898, and while he was such General Sales Agent, he instructed me to open and read any telegrams or cablegrams addressed to Edison, the Edison Phonograph Works, or the National Phonograph Company, which might come into the office of Frederic M. Prescott, and to telephone to Orange the message; that William E. Oilmor e, in September 1897, and from thence continuously to the present time, has been the General Manager of the Edison Manufacturing Company; that he was frequently in our office in the Edison Building 44 Broad Street, and consulted with Frederic M. Prescott privately. I remember when my brother went to Europe in August 1898. Immediately after his departure, his partner, Charles E. Stevens, began to spend less time in the New York Office, and more time at the Edison Works at Orange; that during my brothers absence, he spent three afternoons a week at least at Orange; that he assumed the

entire control of the correspondence, although frequently he was not there during the entire day. I saw him having a private list of customers made by the stenographer; that he allowed the correspondence, especially communications addressed to Frederic M. Prescott for the Edison Phonograph Agency, to remain unanswered and to accumulate, and forbade this deponent to answer letters when this deponent called his attention to the importance of keeping up the correspondence. During my brother's absence in Europe, I know he attempted to make arrangements with the General Electric Company to rent an office. My brother returned on the second of September, and on that very day a lease was signed between the said Stevens and the General Electric Company.

Subscribed and sworn to before me, :
 a Notary Public in and for the :
 County of New York and State of :
 New York, this 12th. day of Aug- : JOHN O PRESCOTT.
 ust, A. D., 1899. Witness my hand and :
 official seal :

Alick G. Macandrew,
 Notary Public No. 2 in and for the County
 of New York and State of New York.

State of New York :
 :SS
County of New York:

FRANCES L. MILLER, being duly sworn

on her oath according to law says: I am a stenographer in the employ of Frederic M. Prescott, Edison Building, New York City, and have been in his employ as an English and Spanish stenographer, having charge of the foreign correspondence since December 8, 1897, and until February 18, 1899. The said Prescott weekly, or oftener than once a week, and up until May 1898, when the firm of Prescott & Stevens was formed, was in the habit of visiting the Edison Phonograph Works in Orange, New Jersey. I have frequently called him up on the telephone and that place and read to him over the telephone, telegrams. Always when he returned from the Edison Phonograph Works at Orange, he brought a list of addresses, most of them in places outside of the United States and Canada, some addresses of New York Commission Houses and some addresses of different persons in the United States. I know these facts, because I wrote the letters to these addresses on each occasion when Mr. Prescott returned from Orange. All of the letters referred to phonographs or kinetoscopes for export. I know William E. Gilmore and Charles E. Stevens. Both of them were frequent visitors at the office of Frederic M. Prescott at the Edison Building, 44 Broad Street, New York City, and their relations with Mr. Prescott seemed to be very close and cordial. I have frequently seen them engaged in private conferences.

(o v e r -)

Subscribed and sworn to before me, :
a Notary Public in and for the :
County of New York State of New York, : FRANCES L. MILLER.
this 12th. day of August, A. D., 1899 :
Witness w hand and official seal :
Alick G. Macandrew
Notary Public No. 2. in and for the
County of New York, State of New York.

STATE, OF NEW YORK :
 :SS
 COUNTY OF NEW YORK. :

FLORIDA S. KENLOGG, being duly

sworn on her oath says; I am a stenographer in the employ
 of the General Electric Company's Foreign Department, New
 York City, and have been in their employ from 1892 continu-
 ously until the present time. From 1894 until the first
 of January, 1896, on which late r date Frederic M. Prescott
 resigned his position with the General Electric Company,
 I was the personal stenographer of the said Prescott. I
 know that it was usual for personal cablegrams addressed
 to Thomas A. Edison to be delivered to the General Electric
 Company in the Edison Building, and that such cablegrams
 came to the Foreign Department in which I was employed,
 and I know that it was the custom of Frederic M. Prescott
 to open these cablegrams and telephone their contents to
 the Edison Phonograph Works in Orange, New Jersey.

Subscribed and sworn to before me :
 :
 a Notary Public in and for the :
 :
 County of New York State of New : FLORIDA S. KENLOGG.
 :
 York this 12th. day of August, A. D., :
 :
 1899. Witness my hand and offi- :
 :
 cial seal. :

Alick G. Macandrew

Notary Public #2 in and for the
 County of New York, State of N.Y.

[3]

State of New York :
 : ss.
County of New York:

CHARLES A. GUNDAKER, Jr., being

duly sworn on his oath according to law deposes and says:

I reside at Newark, New Jersey, and am in the employ of the General Electric Company, 44 Broad Street, New York, having charge of the sales of incandescent electric lamps for that Company; I know that Mr. Thomas A. Edison for several years had his name upon the Directory Board on the first floor of the building, 44 Broad Street, New York, as having an office on the Seventh Floor of that

building. The seventh floor was entirely occupied by the office of the General Electric Company. Mr Edison, to my best knowledge and belief, had no desk there, and while his name was on the Directory Board, he was very seldom on the building and had no regularly established office at that place.

Sworn and subscribed before me, :
A Notary Public in and for the :
County of New York and State of :
New York, this 15th day of August : Chas. A. Gundaker, Jr.
A. D. 1899. :

WITNESS MY HAND AND OFFICIAL SEAL;

ALICK G. Macandrew.

Notary Public No. 2 in and for the
County of New York, State of New
York.

*I always
had a desk
in the office
of General
Edison
for
many
days*

State of New York,
 :SS
 County of New York;

GEORGE C. SCHNEIDER being duly

sworn on his oath says; that he is a resident of the City of New York, having a place of business at 162 Chambers Street in said City; that he knows Frederic M. Prescott and Charles E. Stevens; that in January 1898, he went to the National Phonograph Company's office at West Orange, New Jersey to get prices on Phonographs and supplies for sale in the City of New York and elsewhere; that he saw the said Charles E. Stevens who was the Manager of Sales for the National Phonograph Company at that time, and was referred by the said Stevens to Frederic M. Prescott, 44 Broad Street, New York City; that said Stevens said to this deponent that Mr. Prescott could take better care of deponent in New York than they could in Orange, and that subsequently he called upon Mr. Prescott and found that Mr. Stevens had written Prescott in regard to the matter.

Subscribed and sworn to before :
 me, a Notary Public in and for :
 the County of New York, State : GEORGE C. SCHNEIDER.
 of New York, this 15 day of Aug-
 ust, A. D., 1899 :

WITNESS MY HAND AND OFFICIAL SEAL,

Alick G. Macandrew.

Notary Public #2 in and for the County of
 New York, State of New York.

In Chancery of New Jersey)
Between)
Thomas A. Edison)
Complainant)
and)
Frederic M. Prescott)
Defendant.)

OF BILL &C
Affidavit of
Thomas A. Edison.

State of New Jersey :
: ss.
County of Essex :

Thomas A. Edison being duly sworn according to law on his oath says: My attention has been called to the answer filed by Frederic M. Prescott in the above cause, and I wish to correct some of his statements which appear in it. The answer states that I never "in any proper sense" maintained an office in the Edison Building on Broad Street in New York City. That is not true. When the General Electric Company was organized about eighteen hundred and ninety-one by the consolidation of the Edison General Electric and the Thompson-Houston Electric Company I had a desk in their offices in the Edison Building, which was my headquarters in New York where I stopped whenever I was in New York on business. That was the only office I had then in New York city. Soon after I took an office on the fourth floor of that building and maintained it for sometime, then afterwards gave that up and again had a desk in the offices of the General Electric Company. These were my business headquarters in New York, and were used by me as such. As a rule, letters and telegrams to me in New York were forwarded to Orange, but if not sent to Orange were sent to my office or desk in the Edison Building, and were received by me there or were forwarded to me by some of the employees of the General Electric Company unopened. No one there had the authority to open telegrams, cables or letters addressed to me, and I never knew of any being opened there except the one opened by Frederic M. Prescott as described in

IN CHANCERY OF NEW JERSEY.

B E T W E E N -

Thomas A. Edison,

Compt.,

-AND-

Frederic M. Prescott,

Def.

Affidavit of Thomas A. Edison
and John F. Randolph.

Hayes & Lambert,

Solicitors,

my bill of complaint. If I had ever heard of such a thing being done, I would immediately have put a stop to it. As soon as I learned that Prescott had opened one of my telegrams, I came to the conclusion that he might have opened a great many others, and also letters about which I had no knowledge, and this induced me to try to prevent any such further action on his part by communication with the authorities in New York City. The failure of the post office authorities to protect me and also the character of some complaints I received in regard to Mr. Prescott, made me feel it necessary to begin this suit. All of the letters in regard to Prescott's business to which my attention was called, complained that he was carrying on his business in a way, which, to say the least, was very irregular, and the writers wanted to hold me responsible. I therefore felt that for my own protection, it was necessary for me to put a stop to his use of any title that would in any way give the public to understand that he was my agent or represented me. I never in any way consented to his use of the name "Edison Phonograph Agency" or the use of the word "Agency" in any way in connection with my name. I do not permit that word to be used in connection with my name except where the business is actually carried on by me. I have had a great deal of trouble about this unauthorized use of my name, and my lawyers are now carrying on a number of other suits to prevent such use. Whenever my attention has been called to such use I have directed it to be stopped and have instructed my lawyers to write to the offending parties. In most cases such letters produce the desired effect, but in other cases like the present one, I have had to bring suit. I learned that G. B. Stevens, who I understand was formerly a partner of Prescott, started to use the name "Edison Phonograph Agency" after dissolving partnership with Prescott, and I directed that such use be stopped, and he accordingly stopped

it. I never in any way authorized Prescott to use the name "Edison Phonograph Agency", and never knew that he had used it until about September, eighteen hundred and ninety-eight. As soon as I heard of it I made objections. I had an interview with Prescott about that time and told him that he must not use that business name. He objected and wished to use it, and I said to him about as follows: "I don't want you to use that name. I don't know whether I can stop you in law, but I will if I can." I recognize that goods manufactured by me can properly be designated with my name as showing their place of manufacture, and I make no objection to any such use of my name as descriptive of goods purchased of me and sold by any dealer, but I object to the use of the word "Agency" in connection with my name if it in any way tends to deceive the public by making them believe that that dealer is my agent or represents me in any way other than simply as a seller of my inventions. I am a large stockholder in the National Phonograph Company. It owns many of my patents and sells goods manufactured under those patents, but I am not an officer in the Company and have no knowledge of the details of the selling part of its business. My headquarters at present are at my laboratory at West Orange, and all telephones and telegrams to me are received by my Secretary, John F. Randolph. I am informed by him that he does not remember any instances where any telegram or cable was repeated over the telephone to my laboratory by Prescott or anyone else connected with the General Electric Company in New York, nor any instance where any opened telegram or cable was forwarded in that way to me by mail. There is absolutely no truth in the insinuation contained in the fifth paragraph of Prescott's answer which states that I combined with others to break up his business and ruin him and secure a portion of his business for myself or others. The statement is absurd on the face of it, as

(4)

the companies in which I am interested, viz: the Edison Phonograph Works and the National Phonograph Company, manufacture and sell phonographs, and they are made and sold by no one else, so that the larger business Prescott did, the more profit accrued to the National Phonograph Company, from which he had to buy them, and to the Edison Phonograph Works, who are the exclusive manufacturers.

The allegations in paragraph eight in Prescott's answer are entirely untrue. I have not now and never have had any connection, directly or indirectly, with the phonograph business carried on at No. 174 Fifth Ave., New York City. It is owned and carried on by one Thomas J. Honcks, who is a dealer in talking machines and supplies of the same character as hundreds of others throughout the United States. When he first started the business there he used, without my permission, the name "Edison's Phonograph Agency". He was at once notified by my general counsel in New York, Mr. Richard H. Dyer, that the use of that name could not be permitted, and, as I am assured, then discontinued its use. I have annexed to this affidavit a copy of the letter insisting on the discontinuance of the use of that name *and of his reply*.

Sworn to and subscribed this 23rd :
day of September, A.D., 1899, at :
West Orange, before me. :

Thomas A. Edison

J. F. Randolph
Sotary Public of New Jersey

[ATTACHMENT]

(Copy)

New York, May 29, 1899.

Thomas J. Moncks, Esq.,
174 Sixth Avenue,
City.

Dear Sir :-

We are informed by our client, Mr. Edison, that you are using his trademark signature for advertising purposes at your store in this city. You are doubtless aware that you are violating Mr. Edison's rights in his trademark by this use. We are instructed to require you to remove the sign at once. We feel that in view of your business relations with the National Phonograph Company there should be no occasion for legal action in this connection. We suggest that you comply with our request at once and notify us that you have done so.

Yours truly,

Dyer, Edmonds & Dyer.

(S.O.E.)

[ATTACHMENT]

(Copy)

New York, June 27, 1899.

Mr. S. O. Edmonds,

Dyer Edmonds & Dyer, 31 Nassau St., City.

My dear Mr. Edmonds:-

Replying to your esteemed favor of May 29th.,

I beg to say that your suggestion has been complied with in full

Yours very truly,

T. J. Moncks.

[ATTACHMENT]

In Chancery of New Jersey)

Between)

Thomas A. Edison
Complainant)

and)

Frederic M. Prescott
Defendant.)

ON BILL &c.

Affidavit of

John F. Randolph.

State of New Jersey :
 : ss.
County of Essex :

John F. Randolph, being duly sworn according to law on his oath says: I am the Secretary of Mr. Thomas A. Edison and am employed at his laboratory in West Orange. That has been his principal office for the last four or five years. I receive all telephones for him, also open all telegrams and correspondence. I do not remember ever having received over the telephone the contents of any telegram or cable from Frederic M. Prescott in New York or from any person connected with the General Electric, nor do I remember receiving any opened telegrams or cable by mail, except one received October twenty-ninth, eighteen hundred and ninety-eight, from Prescott. If it had ever been the custom of Prescott or anyone connected with the General Electric Company to open telegrams and cables and repeat them by telephone or forward them by mail, I should certainly have known it, and I never knew of such a thing being done.

Sworn to and subscribed :
before me this 22nd day :
of September, A.D., 1899;
at West Orange, N. J. :

John F. Randolph

J. T. Evans
Notary Public
of New Jersey

NATIONAL PHONOGRAPH CO.,
EDISON LABORATORY,
ORANGE, N. J.

ORANGE June 26, 1900.

IN REPLY TO YOUR LETTER

Howard W. Hayes, Esq.,
Prudential Building,

PLEASE RETURN THESE INITIALS

Newark, N. J.

Dear Sir:

I brought up and discussed with Mr. Edison yesterday the Prescott matter, about which I had a conversation last week with Mr. E. N. Colie, Mr. Prescott's attorney. Mr. Edison is firmly of the opinion that it would not be judicious or wise for us to again place Mr. Prescott on our books as a dealer or jobber. Of course what he would want would be to be put in on a jobber basis, but now that we are running along in a very smooth manner, we do not think it would be wise to have any further disturbing elements come in. This, of course, is in accordance with our understanding.

Inasmuch as you represent Mr. Edison in this litigation, the question with me is whether I should now take it up direct with Mr. Colie or not. My opinion is that you should either confer with Mr. Colie or advise him of the decision reached. I presume that he will then go further into the matter with you, but I do not see that we would reach any other ultimatum. We do not care to do business with Mr. Prescott, as our past experience was not satisfactory.

If it is your desire that I write Mr. Colie, kindly intimate what sort of a reply I should make, or if you decide to take the matter up with him direct, let me know.

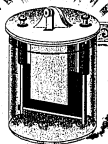
Yours very truly,

W. E. Henning
President.

WEG/IWW

CABLE "Q" BATTERY NEW YORK

SALESROOMS:
135 Fifth Avenue, corner 20th Street,
NEW YORK.



Type "Q" Cell.
CAPACITY 150 AMPERE HOURS



Orange, N. J., August 22nd, 1900.

Howard W. Hayes Esq.,
Prudential Building,
Newark, N. J.,

Dear Sir:-

I enclose you herewith an original communication from a gentleman in Indore, Central India, dated July 12th, 1900, and I have had a copy made of it so that you can understand it readily. You will see from this that Mr. Prescott is still continuing to do business under Mr. Edison's name., It will only be a matter of time when we will learn a great deal about his method of doing business, and get sufficient proof to warrant the court decreeing that he shall not advertise his business under Mr. Edison's name. If this is of any service to you, kindly use it. I have not answered the gentleman's communication and of course would like to do so before you introduce it as evidence in court.

Yours very truly,

W. E. Rieshoff
General Manager.

WEG/DMN.

Enc-G.

Prescott

W. E. Rieshoff

Legal Department Records
Phonograph - Case Files

Thomas A. Edison et al. v. New York Phonograph Company et al.

New York Phonograph Company v. Siegel-Cooper Company

This folder contains material pertaining to the suit brought by Edison, the National Phonograph Co., the Edison Phonograph Works, the Edison Phonograph Co., and Frank L. Dyer against the New York Phonograph Co., James L. Andem, and others in the New York Supreme Court for the County of Westchester. The case was initiated in December 1909 and involved a dispute over the settlement reached in *New York Phonograph Company v. National Phonograph Company et al.*, executed on April 9, 1909. The selected items consist of the bill of complaint and the two contracts of settlement in dispute. Also included is Frank L. Dyer's deposition in another case, *New York Phonograph Company v. Siegel-Cooper Company*, initiated in April 1909 in the New York Supreme Court for the County of Westchester, which discusses the protracted litigation between the New York Phonograph Co. interests and the Edison interests. Among the documents not selected are affidavits and exhibits in the printed record for *Thomas A. Edison et al. v. New York Phonograph Company et al.* Related material can be found in the case files for *New York Phonograph Company v. National Phonograph Company et al.*

SUPREME COURT,
COUNTY OF WESTCHESTER.

THOMAS A. EDISON, NATIONAL PHONOGRAPH COMPANY, EDISON
PHONOGRAPH WORKS, EDISON PHONOGRAPH COMPANY and
FRANK L. DYER,

against.

Plaintiffs,

NEW YORK PHONOGRAPH COMPANY, JAMES L. ANDEM, individually
and as a director and as Secretary of New York Phonograph Company,
WILLIAM FABINESTOCK, individually and as a director and as Treas-
urer of New York Phonograph Company, LEWIS J. MULLFORD, JAMES
SLATER, JOHN H. TRALL, JOHN F. HAINES and HUGH M. FUN-
STON, individually and as directors of New York Phonograph Company,
and JOHN C. TOMLINSON, MILLARD F. TOMPKINS and JOHN C.
TOMLINSON, Jr., as copetitors,

Defendants.

**Motion for Injunction *Pendente Lite* and Papers
Submitted in Opposition and in Reply.**

ROBINSON, HIDDLE & BENEICT, Esqs.,
Attorneys for Plaintiffs,

EDWARD W. HATCH,
GEORGE M. CLARK,
Of Counsel.
79 WALL STREET,
New York City.

LEVENTRITT, COOK & NATHAN, Esqs.,
Attorneys for certain defendants,

DAVID LEVENTRITT,
HAROLD NATHAN,
Of Counsel.
111 BROADWAY,
New York City.

GUTHRIE, BANGS & VAN SINDEREN, Esqs.,
Attorneys for defendant Wm. Fabnestock,

WILLIAM D. GUTHRIE,
Of Counsel.
44 WALL STREET,
New York City.

E. ORMOND POWER, Esq.,
*Appearing specially for defendants Tomlinson,
Tompkins & Tompkins only in the applica-
tion for an injunction herein.*

15 BROAD STREET,
New York City.

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MOVING PAPERS.

1

**Restraining Order and Order to Show
Cause why Injunction Pendente Lite
Should not Issue Herein.**

Supreme Court.

COUNTY OF WESTCHESTER.

2

THOMAS A. EDISON, NATIONAL PHOTOGRAPH COMPANY, EDISON PHOTOGRAPH WORKS, EDISON PHOTOGRAPH COMPANY and FRANK L. DEER,

Plaintiffs,

AGAINST

NEW YORK PHONOGRAPH COMPANY, JAMES L. ANDEM, individually and as a director and as Secretary of New York Phonograph Company, WILLIAM FAIRBENSTOCK, individually and as a director and as Treasurer of New York Phonograph Company, LEWIS J. MURFORD, JAMES SLATER, JOHN H. PHALL, JOHN P. HAINES and HUGH M. FENSTON, individually and as directors of New York Phonograph Company, and JOHN C. TOMLINSON, MILLEARD F. TOMLINSON and JOHN C. TOMLINSON, JR., as copartners,

Defendants.

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It appearing to my satisfaction from the complaint in this action, duly verified on the 4th day of Decem-

6 bor, 1909, and from the affidavit of George M. Clarke,
 dated and sworn to December 9th, 1909, that the plain-
 tiffs demand and are entitled to a judgment against the
 defendants, restraining the defendants and each of
 them, their, and each of their agents, attorneys and
 servants, from the commission of the acts hereinafter
 enjoined, as a violation of the covenants of the defend-
 ant, the New York Phonograph Company, contained
 in the contract mentioned in and annexed to the
 complaint herein and marked "Exhibit 'A'",
 6 which acts it appears by the said complaint
 and affidavit the defendants are doing and pro-
 ceed and intend to continue to do and procure and
 suffer to be done, and threaten
 7 and intend to continue to do and procure and
 suffer to be done in violation of the plaintiffs' rights
 respecting the subject of the action and that the con-
 tinuance of such acts or either or any of them during
 the pendency of this action would produce irreparable
 injury to the plaintiff and tend to render the judgment
 of the Court herein ineffectual; and the plaintiffs her-
 7 ing duty given the undertaking required by law,

Now, on motion of Robinson, Bidelle & Benedict,
 attorneys for plaintiffs, it is hereby

ORDERED that the defendant New York Phonograph
 Company, its officers, directors, agents, servants and
 attorneys, and the other defendants herein and each
 and every of them, be and they are hereby enjoined
 and restrained, until the further order of this Court,
 under the penalties prescribed by law, from transfer-
 8 ring or attempting to transfer the control, books, in-
 struments, papers or other property of the defendant, New
 York Phonograph Company to any person or persons
 whomsoever, other than these plaintiffs or their nomi-
 nees or nominees, pursuant to such contract, Exhibit
 "A," and from instituting or prosecuting any action
 or proceeding at law or in equity, or instituting or
 presenting any appeal in the name of or in behalf of,
 the defendant New York Phonograph Company, with-
 out the consent of these plaintiffs, and from taking any
 action whatsoever in the name of or in behalf of said
 New York Phonograph Company, in violation of plain-

the rights, as procured by said Contract. And on
 like motion, it is further

ORDERED that the defendant New York Phonograph
 Company, its officers, directors, agents, servants and
 attorneys, be and they are hereby enjoined and re-
 strained, until the further order of this Court, from
 transferring upon the books of said New York Phonog-
 10 raph Company, the 2202 shares of the capital stock
 of said New York Phonograph Company, mentioned
 in the complaint herein, except to these plaintiffs, or
 to their nominee or nominees, and from making and
 issuing and delivering to any person or persons, other
 than the plaintiffs or to their nominee or nominees, a
 new certificate or new certificates of stock in lieu and
 stead of said 2202 shares; and on like motion, it is
 further

ORDERED that the defendant New York Phonograph
 Company, its officers, directors, agents, servants and
 attorneys, and each and every of them, be and they
 are hereby enjoined and restrained, until the further
 order of this Court, from permitting the person or
 persons in whose name or names the above mentioned
 11 2202 shares of the capital stock of said New York
 Phonograph Company stand upon the books thereof,
 or who appears or appear to be stockholders of record
 of said company owning said shares or any of them,
 or any person or persons other than the plaintiffs or
 their nominee or nominees to vote the said 2202 shares
 of the capital stock of said company, or any part of
 said shares at any meeting of the stockholders of said
 12 company;

Upon the annexed complaint and affidavit, let the
 defendants and each of them, or their attorneys, show
 cause before me at the County Court House, White
 Plains, N. Y., on the 13th day of December, 1909, at
 10 o'clock in the forenoon, or as soon thereafter as
 counsel can be heard, why this order should not be
 continued during the pendency of the action, of which
 motion service of this order, together with the papers
 whereon the same is granted, on or before the 8th
 day of December, 1909, shall be sufficient notice, and

13 also why the plaintiffs should not have such other and further relief as may be just; and it is further

Ordered that the plaintiffs herein may submit upon the return of this order to show cause, further proof by way of affidavit or affidavits as to the matters set forth in the complaint, as they may be advised, provided that copies of such affidavit or affidavits be served upon the defendants or their respective attorneys on or before the 10th day of December, 1909.

Dated, December 6th, 1909.

14 M. J. KNOX,
Justice of the Supreme Court of the State of New York.

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SUPREME COURT,
COUNTY OF WESTCHESTER.

THOMAS A. EDISON, NATIONAL PHONOGRAPH COMPANY, EDISON PHONOGRAPH WORKS, EDISON PHONOGRAPH COMPANY and FRANK L. DYER,
Plaintiffs,

AGAINST

NEW YORK PHONOGRAPH COMPANY, JAMES L. ANDER, individually and as a director, and as Secretary of New York Phonograph Company, WILLIAM FARRINGTON, individually and as a director and as Treasurer of New York Phonograph Company, LEWIS J. MULFORD, JAMES SLATER, JOHN H. PRALL, JOHN P. HAINES and HUGH M. FOSTON, individually and as directors of New York Phonograph Company, and JOHN C. TOMLINSON, MILWARD F. TOMPENS and JOHN C. TOMLINSON, Jr., as copartners,
Defendants.

TO THE ABOVE-NAMED DEFENDANTS:

You and each of you are hereby summoned to answer the complaint in this action, and to serve a copy of your answer on the plaintiff's attorneys within twenty days after the service of this summons, exclusive of the day of service; and in case of your failure to appear, or answer, judgment will be taken against

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Summons.

Trial desired in
Westchester
County.

you by default, for the relief demanded in the complaint.

Dated, December 3rd, 1909.

ROBINSON BIDDLE & BENEDICT,
Attorneys for Plaintiffs,
Office and Post Office Address,
79 Wall Street,
Borough of Manhattan,
New York City.

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SUPREME COURT,
COUNTY OF WESTCHESTER.

THOMAS A. EDISON, NATIONAL PHONO-
GRAPH COMPANY, EDISON PHONO-
GRAPH WORKS, EDISON PHONOGRAPH
COMPANY and FRANK L. DYER,
Plaintiffs,

25

AGAINST

NEW YORK PHONOGRAPH COMPANY,
JAMES L. ANDEM, individually and
as a director and as Secretary of
New York Phonograph Company,
WILLIAM FARNSWORTH, individually
and as a director and as Treasurer
of New York Phonograph Com-
pany, LEWIS J. MURFORD, JAMES
SLEATER, JOHN H. PAULS, JOHN P.
HANKS and HUGH M. FENSTON,
individually and as directors of
New York Phonograph Company,
and JOHN C. TOMLINSON, WILLIAM
F. TOMLINSON and JOHN C. TOMLIN-
SON, JR., as copartners,

26

Complainant.

27

Defendants.

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The plaintiffs above named, by Robinson, Biddle & Benedict, their attorneys, complain of the defendants and respectfully show to this Court:

I. That at all the times hereinafter mentioned each of the plaintiffs, National Phonograph Company, Edison Phonograph Works and Edison Phonograph Company was and still is a foreign corporation duly

20 created and existing under and by virtue of the laws of
the State of New Jersey.

21 II. That at all the times hereinafter mentioned, the
defendant New York Phonograph Company was, and
still is, a corporation duly created and existing under
and by virtue of the laws of the State of New York,
having its principal office at Harryvora, in said State
of New York; that the defendant James L. Andem
at the times hereinafter mentioned was, and, on
80 information and belief, still is, the Secretary and a
director of the said New York Phonograph Company;
that the defendant William Fahnestock was the Treas-
urer and a director of said New York Phonograph
Company; and that the defendants William Fahnes-
tock, Lewis J. Mulford, James Slater, John H. Prall,
John F. Haines and Hugh M. Fauston were on April
3, 1909, and for about two weeks thereafter directors
of said New York Phonograph Company.

31 III. That the defendant John C. Tomlinson, Millard
F. Tompkins and John C. Tomlinson, Jr., are and at
all times hereinafter mentioned were attorneys and
counselors-at-law of the State of New York, and en-
gaged in the practice of law as copartners at No. 15
Broad Street, in the Borough of Manhattan, City of
New York, under the firm name of Tomlinson, Tomp-
kins & Tomlinson.

32 IV. On the 3rd day of April, 1909, the plaintiffs
herein, acting through the plaintiff Frank L. Dyer,
entered into a contract with the defendant New York
Phonograph Company and the defendant James L.
Andem, individually and acting for and in behalf of the
Kansas Phonograph Company, Ohio Phonograph Com-
pany, State Phonograph Company of Illinois, Kentucky
Phonograph Company, Missouri Phonograph Company,
Minnesota Phonograph Company and Wisconsin
Phonograph Company, a copy of which is hereto an-
nexed marked Exhibit A which the plaintiffs pray may
be taken to be a part of this complaint.

33 V. That in and by said contract the defendant New
York Phonograph Company covenanted that upon the
payment by the plaintiffs herein of the sum of four
hundred and five thousand dollars (\$465,000), as in
said contract provided, and the performance by said
plaintiffs of all the covenants and agreements on their
part in said contract to be kept and performed, the de-
fendant New York Phonograph Company would,
among other things, assign to the plaintiffs such por-
tion of the number of shares of the capital stock of the
defendant New York Phonograph Company as might 34
be possible, not less, however, than two thousand
(2,000) shares, and further covenanted and agreed that
said stock should be turned over to the plaintiffs within
forty-eight hours after the payment, to the holders of
record of said stock, or dividends resulting thereon
from the settlement set forth in said contract.

35 VI. That in and by said contract the defendant New
York Phonograph Company further covenanted and
agreed that it would deliver, in so far as it legally
could, to such persons as plaintiffs should designate,
all the books, minutes and papers of said New York
Phonograph Company then held by said Company or
by defendant James L. Andem, and would also procure,
so far as possible, the resignations of the Board of
Directors and officers of said New York Phonograph
Company, and would aid in the transfer of the control
of said New York Phonograph Company to such per-
son or persons as these plaintiffs should designate.

36 On information and belief, that the defendants leg-
ally could have, and can now legally transfer and
deliver the books, minutes and papers of said New
York Phonograph Company and the resignations of
the Board of Directors and officers of said New York
Phonograph Company and aid in the transfer of the
control of said Company to the nominee or nominees
of the plaintiffs, as required to do in and by the terms
of said agreement.

37 VII. That the plaintiffs have performed each and
every covenant and agreement on their part to be per-

37 formed in and by said contract, and did on or about the 8th day of April, 1909, pay to the defendants New York Phonograph Company and to James L. Andam the sum of Four hundred and five thousand dollars (\$405,000), as in said agreement provided.

On information and belief, that the defendant New York Phonograph Company, on or about the 9th day of April, 1909, paid to its stockholders as and for a dividend from and out of its portion of the said sum of Four hundred and five thousand dollars (\$405,000) so paid by the plaintiffs, 38 pursuant to said contract, the sum of Nine dollars (\$9) per share; that the defendant William Falmestock was then the Treasurer of defendant New York Phonograph Company and made and signed the checks to the stockholders of said Company or paid over the money to them as and for the said dividend.

On information and belief, that all the directors and officers of said New York Phonograph Company did on or about April 9th, 1909, make said deliver their resignations as such directors and officers, dated about April 19, 1909, and that the same were placed in the possession of the defendants Tomlinson, Tompkins & Tomlinson, for delivery to plaintiffs pursuant to the said contract Exhibit A hereto; that said Tomlinson, Tompkins & Tomlinson acted as attorneys for the defendant New York Phonograph Company upon the settlement referred to in said contract and continued so to act but without any authority from the defendant New York Phonograph Company for so doing. 40

VIII. That the plaintiffs have repeatedly requested the defendant New York Phonograph Company and also the defendants Tomlinson, Tompkins & Tomlinson to turn over to the plaintiffs or to their attorneys the resignations of said officers and directors of the defendant New York Phonograph Company so held by them as aforesaid, but that they have hitherto wholly neglected and refused and do now neglect and refuse to comply with said request.

IX. That plaintiffs have hitherto designated to the defendant New York Phonograph Company and to the defendants Tomlinson, Tompkins & Tomlinson, their attorneys Moses, Robinson, Biddle & Beaudet, of No. 79 Wall Street, New York City, as the persons to whom delivery should be made by said New York Phonograph Company of its books, minutes and papers as in said contract provided, and as the persons to whom should also be delivered the resignations of the directors and officers of said New York Phonograph Company as in said contract provided, 41 and the persons whom the said New York Phonograph Company should aid in securing the transfer of the control of said New York Phonograph Company.

X. That after repeated requests the defendant New York Phonograph Company did, in the month of November, 1909, cause to be delivered by said defendant Tompkins to the plaintiffs' said attorneys certificates for two thousand two hundred and two (2,202) shares of the capital stock of said Company, endorsed in blank, but said New York Phonograph Company and the defendant officers and directors of said company have neglected and refused not still neglect and refuse to transfer said shares of stock upon the books of the said company, or to issue new certificates of stock in exchange therefor to the said plaintiffs or to their counsel or nominees, although often requested so to do; that plaintiffs have caused diligent efforts to be made to have said certificates transferred upon the books of the said company and new certificates issued therefor, but have been unable to find any officers of the New York Phonograph Company in the State of New York authorized to, or who would effect such transfer and exchange, either at the Company's principal office or at the office of the defendants Tomlinson, Tompkins & Tomlinson, or elsewhere, and plaintiffs are advised and believe, and therefore allege, that until said stock of defendant New York Phonograph Company is properly transferred to the plaintiffs or to their nominees pursuant to the provisions of said agreement, and new 44

46 certificates are issued therefor, those plaintiffs will be unable to vote said stock at the meetings of the stockholders of said company, or to have any voice in the management and control of its affairs, or in the election of its directors and officers, as only stockholders of record are entitled to vote at such meetings.

XI. That plaintiffs have heretofore demanded of defendant New York Phonograph Company and also of the defendants Tomlinson, Tompkins & Tomlinson that said New York Phonograph Company forthwith carry out and perform all its covenants and agreements in said contract contained on its part to be performed, but that said company has at all times neglected and refused, and still neglects and refuses to properly transfer to the plaintiffs or to their nominees the shares of the capital stock of said New York Phonograph Company, as provided by said contract, and the defendants have also neglected and refused, and still neglect and refuse to deliver to Messrs. Robinson, 47 Editt & Benedict, the persons designated by plaintiffs as aforesaid pursuant to the terms of said contract, the books, minutes and papers of said New York Phonograph Company mentioned in said contract, and have neglected and refused, and still neglect and refuse to aid the plaintiffs' said nominees in the transfer of the control of said New York Phonograph Company, all in violation of the covenants and agreements contained in said contract on the part of said New York Phonograph Company to be performed.

48 On information and belief, that the defendant James I. Andem, who claims to be Secretary of the defendant New York Phonograph Company, and its other alleged officers have remained away from the office of said Company in this State, and have absented themselves from the State or kept themselves concealed for the purpose of avoiding the plaintiffs herein and their attorneys and preventing them from securing the transfer of the control, books, minutes and papers of the Company, and of said two thousand two hundred and two (2,202) shares of the capital stock

of the Company pursuant to the terms of the agreement Exhibit A. 49

XII. Plaintiffs further show that immediately after the payment of the four hundred and five thousand dollars (\$405,000) heretofore mentioned by the plaintiffs to the defendants New York Phonograph Company and James I. Andem, one Samuel F. Hyman, an attorney and counselor-at-law of this State, brought a proceeding in this Court to have his attorney's fees adjudged in some four hundred cases brought in this Court by New York Phonograph Company as plaintiff against various jobbers and dealers in Edison phonograph supplies in the State of New York, in which actions said Hyman appeared as attorney of record for the plaintiff, all of which cases were settled by the parties thereto simultaneously with the settlement set forth in the contract Exhibit A, by a contract in writing dated April 3rd, 1909, a copy of which is hereto annexed marked Exhibit B, which plaintiffs pray may be taken to be a part of this 51 their complaint, and on the consummation of the settlement of said last-mentioned suits these plaintiffs paid to the defendant New York Phonograph Company the sum of twenty thousand dollars (\$20,000), in addition to and apart from the sum of four hundred and five thousand dollars (\$405,000) heretofore mentioned; that said proceeding so instituted by Samuel F. Hyman, Esq., has been heard and submitted, but no decision has as yet been rendered therein.

52 On information and belief, that the defendants threaten and intend to take legal action in said Hyman's proceeding in behalf of and in the name of said New York Phonograph Company, and also threaten and intend to act as officers, directors, attorneys and agents of said New York Phonograph Company in the management and control of its affairs, notwithstanding their resignations made and delivered as aforesaid, and without the consent of those plaintiffs or their nominees or nominees as stockholders or otherwise, and contrary to their wishes, and if per-

mitted so to do, injustice and irreparable damage and injury will result to the plaintiffs herefrom, for which they will have no adequate remedy at law.

XIII. That the shares of stock of the New York Phonograph Company are of uncertain value and cannot be purchased in the open market and if at least two thousand (2,000) shares of its stock are not forthwith transferred to these plaintiffs or to their nominee or nominees upon the books of said Company, and new certificates issued therefor, as provided in and by the contract (Exhibit A), the plaintiffs will suffer great and irreparable loss for which money damages would not be adequate compensation; that if the two thousand (2,000) or more shares of stock of defendant New York Phonograph Company now stood in the name of the plaintiffs, or their nominee or nominees upon the books of the Company, these plaintiffs would control the election of a Board of Directors of said Company and the management and disposition of its affairs; that the defendant New York Phonograph Company has not sufficient assets in the State of New York or elsewhere, and is and would be unable to respond in damages for the breach of its said contract (Exhibit A); and that unless said contract is specifically performed the benefits under the same will not accrue to the plaintiffs, in whose favor it was made.

WHEREFORE, the plaintiffs ask the judgment of this Court:

1. That the defendant New York Phonograph Company, its officers, directors, servants and agents, be ordered and directed to transfer to the names of the plaintiffs, or to the same or names of their nominee or nominees upon the books of the Company the above mentioned two thousand two hundred and two (2,202) shares of the capital stock of that Company, and to issue a new certificate or new certificates of stock therefor to and in the name of such person or persons as the plaintiffs may direct, and that a mandatory injunction order be issued therefor.

2. That the defendant New York Phonograph Company, its officers, directors, agents, attorneys and servants, and the other defendants, and each and every of them, be ordered and directed to deliver to the plaintiff's attorneys, Messrs. Robinson, Biddle & Benedict, all the books, minutes and papers of the defendant New York Phonograph Company, and the resignations of the directors and officers of said New York Phonograph Company, and that a mandatory injunction order be issued therefor.

3. That the defendant New York Phonograph Company, and its officers, directors, servants and agents, be ordered and directed to execute any and all proper instruments in writing for the purpose of conveying and transferring to the plaintiffs or to their nominee or nominees, the control of said New York Phonograph Company.

4. That the defendant New York Phonograph Company, its officers, directors, agents and servants, and the other defendants, and each and every of them, be perpetually enjoined and restrained from transferring or attempting to transfer the control, books, minutes, papers or other property of the defendant New York Phonograph Company to any person or persons other than these plaintiffs or their nominee or nominees pursuant to said contract (Exhibit A); and from instituting or prosecuting any action or proceeding at law or in equity, or instituting or prosecuting any appeal, in the name of or in behalf of the defendant New York Phonograph Company without the consent of these plaintiffs; and from taking any action whatever in the name of or in behalf of said New York Phonograph Company in violation of plaintiffs' rights as provided by said contract; and that the said defendants and each of them be enjoined and restrained from doing or suffering or permitting to be done any of the acts above mentioned during the pendency of this action and until the further order of the Court in the premises.

5. That the defendant New York Phonograph Company, its officers, directors, and agents, be enjoined

61 and restrained during the pendency of this action and until the further order of the Court in the premises, from transferring upon the books of said Company the two thousand two hundred and two (2,202) shares of the capital stock of said Company hereinbefore mentioned except to the plaintiffs or to their nominee or nominees, and from making and issuing and delivering to any person or persons other than the plaintiffs or to their nominee or nominees, a new certificate or new certificates of stock in lieu and stead of said Two thousand two hundred and two (2,202) shares to which these plaintiffs are entitled under the said agreement Exhibit A.

62 6. That the defendant New York Phonograph Company and its officers, directors and agents, and each and every of them, be enjoined and restrained during the pendency of this action and until the further order of the Court in the premises, from permitting the person or persons in whose name or names the above-mentioned two thousand two hundred and two (2,202) shares of the capital stock of said Company stand upon the books of the Company, or who appears or appear to be stockholders of record of said Company owning said shares, or any of them, or any person or persons, other than the plaintiffs or their nominee or nominees, to vote the said two thousand two hundred and two (2,202) shares of the capital stock of said Company, or any part of said shares, at any meeting of the stockholders of said Company.

63 7. And that the plaintiffs have such other and further relief or both in the premises as may be just and equitable, and that the plaintiffs recover of the defendants their costs of this action.

ROUSSEAU, BROWN & BENDER, JR.

Attorneys for the plaintiffs,

Office and Post Office Address:

No. 79 Wall Street,
Borough of Manhattan,
New York City.

STATE OF NEW JERSEY, } ss.:
County of Atlantic, }

65

FRANK L. DYER, being duly sworn, according to law, deposes and says:

That he is one of the plaintiffs in this action; that he has read the foregoing complaint and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated to be alleged upon information and belief, and as to those matters, he believes it to be true.

(Signed) FRANK L. DYER. 66

Sworn to before me this 4th }
day of December, 1913. }

ERK K. CHANDLER,

Commissioner for the State of New Jersey for
the State of New Jersey, residing at
[SEAL] Atlantic City, N. J.
Commission expires March 1st, 1913.

67

STATE OF NEW JERSEY, } ss.:
County of Atlantic, }

FRANK L. DYER, being duly sworn, according to law, deposes and says:

That he is the President and an officer of the National Phonograph Company, one of the corporations-plaintiffs in the above entitled action; that he is the Vice-President and an officer of the Edison Phonograph Company, one of the corporations-plaintiffs in the above-entitled action; and that he is the General Manager and an officer of the Edison Phonograph Works, one of the corporations-plaintiffs in the above entitled action.

That deponent has read the foregoing complaint and knows the contents thereof, and that the same is true of his own knowledge, except as to the matters therein stated to be alleged upon information and belief, and that as to those matters, he believes it to be true.

That the reason why this verification is not made by

69 the plaintiff National Phonograph Company and the plaintiff Edison Phonograph Company and the plaintiff Edison Phonograph Works is because each of the corporations-plaintiffs named is a foreign corporation created by and existing under and by virtue of the laws of the State of New Jersey; that the grounds of deponent's belief as to all matters in said complaint not stated upon his knowledge are investigation which deponent has caused to be made concerning the subject matter of this action and information which 70 him in the course of his duties as an officer of the respective corporations-plaintiffs in this action, and also the information acquired by him from an examination of the original contracts of settlement annexed to the complaint and marked Exhibits "A" and "B", and from the participation by deponent in all the negotiations between the plaintiffs and their attorneys on the one part and the defendants New York Phonograph Company and James L. Anderson and their attorneys on the other part, which led up to the making 71 of said contracts, and supervision of the payment of all moneys by the plaintiffs to the defendants in pursuance of said contracts, and personal communications had by deponent with the attorneys for the plaintiffs relating to all the matters set forth in the foregoing complaint.

Sworn to before me this 4th day of December, 1909. (Signed) FRANK L. DYER.

72 ERIK H. CHAMBERLAIN,
Commissioner for the State of New York the
(SEAL) State of New Jersey residing at Atlantic
City New Jersey.
Commission expires March 1, 1913.

STATE OF NEW JERSEY, }
County of New York, } ss:

GEORGE M. CLARK, being duly sworn, according to law, deposes and says:

That he is one of the attorneys for all the plaintiffs herein.

That each of the corporations-plaintiff is a foreign corporation organized and existing under the laws of the State of New Jersey, and the plaintiff Thomas A. Edison is a resident of Lewellyn Park, in the State of New Jersey, and is not within the State of New York, County of New York, which is the County where deponent resides.

That deponent has read the foregoing complaint and knows the contents thereof, and that the same is true to the knowledge of deponent, except as to the matters therein stated to be alleged upon information and belief, and that as to those matters, he believes it to be true.

76 That all the material allegations therein are within the personal knowledge of deponent.

Deponent further says that the grounds of his belief as to all of the matters therein not stated upon his knowledge are the original contracts mentioned in the complaint marked Exhibits A and B, which were drawn by deponent and his associates and were signed by all the parties thereto and witnessed in his presence, and which are in his possession, also information obtained by deponent in the course of his duties as attorney for the plaintiffs throughout their negotiations with the 78 defendants, which resulted in the said settlement and the making of said contracts and the payment over to the defendants by the plaintiffs of the moneys due thereunder in deponent's presence, and information acquired by him as attorney for said plaintiffs in numerous conferences with the defendants James L. Anderson, William Fehnestock and Tomlinson, Tompkins & Tomlinson.

Deponent further says that the reason why this verification is not made by said plaintiffs is that, as above

77 stated, the plaintiff Thomas A. Edison is not within the County of New York, where deponent resides, and that all of the corporations-plaintiff are foreign corporations organized under and by virtue of the laws of the State of New Jersey.

GEORGE M. CLARKE.

Sworn to before me this 4th
day of December 1905.

WILLIAM F. ALLEN,

Notary Public,

New York County.

County Clerk's certificate attached.

78

79

80

"Exhibit A."

81

AGREEMENT, made this Third day of April, in the year Nineteen Hundred and Nine, between New York Photograph Company, James L. Anshen, Individually, and James L. Anshen, for and on behalf of the Kansas Photograph Company, the Ohio Photograph Company, the State Photograph Company of Illinois, the Kentucky Photograph Company, the Missouri Photograph Company, the Minnesota Photograph Company and the Wisconsin Photograph Company, parties of the first part, and Frank L. Eves, acting for and on behalf of Thomas A. Edison, the National Photograph Company, the Edison Photograph Company, and the Edison Photograph Works, party of the second part, Wisconsin:

82

WHEREAS the above named parties of the first part have brought suits in diverse jurisdictions against the interests represented by the party of the second part, which suits are now pending; and

83

WHEREAS the parties hereto have agreed to settle all such differences, except the causes of action of the New York Photograph Company and any interests which James L. Anshen may have therein, and for which suits have been brought by Samuel F. Hyman, as attorney of record, and are now pending in the Court of Appeals and in the Supreme Court for Westchester County, in all of which suits the New York Photograph Company is plaintiff and various jobbers and dealers of the National Photograph Company in the State of New York are defendants; and

84

WHEREAS all the parties hereto have agreed to settle and compromise all existing suits and differences (except those heretofore mentioned, in which Samuel F. Hyman appears as attorney of record) in consideration of the payment of Four hundred and five thousand dollars (\$405,000) cash by the party of the second part to the parties of the first part, Five thousand dollars (\$5,000) of which Four hundred and five thousand dollars (\$405,000) shall be paid upon the signing

86 and sealing of this agreement, the receipt of which is hereby acknowledged, and the balance thereof,—to wit, the sum of Four Hundred thousand dollars (\$400,000),—upon the performance of all the conditions herein-after set forth on the part of the parties of the first part hereto to be performed.

Now, in consideration of the payments made and to be made as aforesaid, and of the premises, and of the mutual covenants and agreements herein contained, the parties hereto hereby agree as follows:

86 First: James L. Andem and the New York Phonograph Company covenant that, upon the payment of the sum of Four hundred and five thousand dollars (\$405,000), as hereinafter provided, and the performance by the party of the second part of all the covenants and agreements herein contained on his part to be performed, they will cause to be forthwith discontinued, without costs, all of the pending suits in any and all jurisdictions, brought directly or indirectly by the said James L. Andem and the New York Phonograph Company, or either of them, against any of the interests represented by the party of the second part (except the suits hereinbefore mentioned in which Samuel F. Hyman has appeared as attorney of record for said New York Phonograph Company), and will deliver to the party of the second part valid and effective general releases from said New York Phonograph Company of all claims, demands, actions or causes of action of whatsoever nature, litigated or unlitigated, which it may now have against the party of the second part or the interests represented by him, except the causes of action for which suits have been heretofore brought by Samuel F. Hyman, as attorney of record as aforesaid.

87 Second: The New York Phonograph Company covenants, that upon the payment of the sum of Four hundred and five thousand dollars (\$405,000), as hereinafter provided, and the performance by the party of the second part of all the covenants and agreements on his part to be performed, it will

(a) Assign to the party of the second part, or his

nominees, any and all right, title and interest which it may have in or to any and all patents owned or controlled by the interests represented by the party of the second part, or any of them.

(b) Assign to the party of the second part such portion of the number of shares of the capital stock of the New York Phonograph Company as may be possible, which number of shares, however, shall not be less than Two thousand (2,000) shares. Such stock shall be turned over within forty-eight (48) hours after the payment to the holders of record thereof of dividends resulting from this settlement.

(c) Release all claim to and execute a formal consent to the delivery to the party of the second part of the Twenty-five hundred (2500) shares of stock of the Metropolitan Phonograph Company and the Twenty-five hundred (2500) shares of the stock of The New York Phonograph Company now held by the Central Trust Company of New York, as Trustee, for delivery as a consideration of the extended license involved in these litigations.

(d) Deliver, in so far as it legally can, to such persons as the party of the second part shall designate, all the books, minutes, and papers of the New York Phonograph Company now either held by said Company or said Andem, and will also procure, as far as possible, the resignation of the Board of Directors and Officers of said New York Phonograph Company, and will aid in the transfer of the control of said Company to such person or persons as the party of the second part shall designate.

(e) Procure and delivery to the party of the second part a good, valid and effective general release and consent to this settlement executed by Tomlinson, Tompkins & Tomlinson.

(f) Sign a stipulation consenting that the decree for an accounting heretofore entered in the suit brought by it against the National Phonograph Company and others in the United States Circuit Court for the Southern District of New York be vacated, and that the injunction heretofore issued in

98 said suit be dissolved, and that said suit be discontinued, without costs.

(g) Execute a consent that all bonds given by any of the parties represented by the party of the second part hereto in any of the litigations heretofore mentioned, or any other matters, shall be cancelled of record, except bonds in the suits heretofore mentioned, wherein Samuel F. Hyman is attorney of record.

(h) Execute in favor of the National Phonograph Company a waiver of its portion of the fine directed to be paid by the National Phonograph Company in the contempt proceeding arising out of the alleged violation of the above mentioned injunction.

(i) Procure and deliver to the party of the second part good, valid and effective general releases executed by the New York Phonograph Company and James L. Audem, individually, and James L. Audem in behalf of all the companies heretofore mentioned as represented by him in favor of Frederick P. Ott and the Ott Manufacturing Company, a corporation of the State of New Jersey.

(j) Procure in writing a ratification by the Executive Committee and also of the Board of Directors of the New York Phonograph Company of the matters herein set forth relating to this settlement.

Item: The said James L. Audem covenants and agrees that, upon the payment of the sum of Four hundred and five thousand dollars (\$405,000), as hereinafter provided, and the performance by the party of the second part of all the covenants and agreements herein contained on his part to be performed, he will

(a) Deliver to the party of the second part an effective and authoritative general release in favor of all the interests represented by the party of the second part, executed by said Audem, whereby he shall release to the party of the second part all the rights, actions, causes of action, interests and claims of every kind, owned, held or asserted by him, in his own behalf or in behalf of the following Companies: The Kansas Phonograph Company, the Ohio Phonograph Company,

the State Phonograph Company of Illinois, the Kentucky Phonograph Company, the Missouri Phonograph Company, the Minnesota Phonograph Company and Wisconsin Phonograph Company, and any and all other companies which said James L. Audem has authority to represent and settle for.

(b) Deliver to the party of the second part good, valid and effective assignments of all his right, title and interest in and to any and all recoveries or rights of recovery arising by virtue of his contracts with any and all of said companies (except that he shall not be required to assign any interest that he may have in and to any of the moneys paid on the settlement contemplated by this agreement or in and to any interest that he may have in the suits prosecuted in the Supreme Court of Westchester County by Samuel F. Hyman, and heretofore referred to, wherein the New York Phonograph Company is plaintiff).

(c) Deliver to the party of the second part consents to discontinue all of said suits, except those wherein the New York Phonograph Company is plaintiff, without costs, including the minority stockholder's suit brought by certain stockholders of the New England Phonograph Company in the New Jersey Court of Chancery.

(d) Deliver to the said party of the second part an agreement wherein he shall covenant that he will not bring, directly or indirectly, in his own behalf, or in behalf of others, any suit or suits of any kind whatever, against the party of the second part or any of the interests represented by him herein, or be interested, directly or indirectly, in any such suit.

(e) Ratify and confirm all the releases to be given by any or all of the parties of the first part, as herein contemplated and to which such ratification and confirmation may be desired by the party of the second part.

(f) Procure and deliver to the party of the second part good, valid and effective general releases from the law firm of Ferguson & Fer-

101 person, who appear as solicitors of record in various suits brought against the interests represented by the party of the second part hereto in the Circuit Court of the United States for the District of New Jersey and elsewhere.

(g) Delivery to the party of the second part satisfactory evidence of the satisfaction of any and all claims of Mr. Murray, Mr. Hedge and Mr. Huested on account of services in any of the litigious or differences between any of the parties hereto.

102 FOURTH: The party of the second part agrees that (a) The stock now owned or controlled by the interests represented by him of the New York Phonograph Company, aggregating at least Six thousand, nine hundred and forty-two (6,942) shares, and the stock now held by the Central Trust Company, referred to in subdivision (c) or paragraph numbered "Second" of this agreement, shall not be entitled to participate in or receive any of the moneys paid to the parties of the first part under this settlement, and that

103 proper agreements to carry this into effect shall be executed by the stockholders in whose names the said stock shall stand.

(b) He will procure and deliver to James L. Anderson and the New York Phonograph Company a general release running to said Anderson and said New York Phonograph Company from William Felzer and the National Phonograph Company.

FIFTH: The parties hereto hereby agree that they, and each of them, will execute any and all 104 other papers that may be reasonably necessary to carry out the purposes of this settlement, and that all the papers relating to this settlement shall be subject to the approval of Hon. Edward W. Hatch and John C. Tomlinson, acting as counsel for the respective parties hereto.

SIXTH: The parties hereto hereby agree that all of the moneys to be paid hereunder and all the covenants and agreements to be performed by any or all of the parties hereto, except where a different time is heretofore expressed, shall be performed

and completed on or before Friday, the 9th day of 105 April, 1909, at six o'clock P. M., unless the parties hereto shall consent in writing to the farther extension of the time of performance of this agreement. The closing of this contract shall take place at the office of the National Phonograph Company, No. 10 Fifth Avenue, in the Borough of Manhattan, City of New York, or at such other place as the parties hereto may hereinafter agree upon in writing.

SEVENTH: The party of the second part agree that he will, upon the closing of the settlement set forth 106 in this agreement, deliver to the parties of the first part, or their duly authorized agents, checks in the aggregate amount of Four hundred and five thousand dollars (\$405,000) provided that the parties of the first part shall have performed all the covenants and agreements herein contained on their part to be performed.

EIGHTH: It is mutually understood and agreed that, if the papers prepared by Tomlinson, Tompkins & Tomlinson in connection with this settlement shall not 107 be approved by Edward W. Hatch, counsel for the party of the second part, and the parties of the first part refuse or are unable to have papers in the form proposed by Edward W. Hatch signed and executed, and for this reason the party of the second part fails to pay the Four hundred and five thousand dollars (\$405,000) to be paid hereunder by or before Six o'clock P. M. on April 9, 1909, then this agreement shall be null and void, and the Five thousand dollars (\$5,000) paid hereunder by the party of the second 108 part to the parties of the first part shall be returned to said party of the second part, and the rights of the parties hereto shall be the same as they would have been had this agreement never been made.

IN WITNESS WHEREOF the New York Phonograph Company has caused there presents to be executed by James L. Anderson, its duly authorized agent, and its corporate seal to be hereto affixed by its Secretary, and the remaining parties to this agreement have

100 signed and sealed the same the day and year first above written,

NEW YORK PHONOGRAPH COMPANY,
By JAMES L. AXDEN, Secretary,
JAMES L. AXDEN, [l. s.]
Individually and for the Phonograph
Cos. mentioned in the first para-
graph of this agreement as being
represented by him.

110 FRANK L. DYER, [l. s.]
For and on behalf of Thomas A.
Edison, National Phonograph
Company, Edison Phonograph
Works and Edison Photograph
Company.

In the presence of:

Geo. R. ALLEN,
JAMES M. LAWRENCE,
{ Corporate Seal }
{ N. Y. Phon. Co. }

111

"Exhibit B."

AGREEMENT, made this 3rd day of April, in the year
Nineteen Hundred and Nine, by and between New
York Phonograph Company, a corporation of the State
of New York, party of the first part, and Frank L.
112 Dyer, acting in behalf of Thomas A. Edison, the Na-
tional Phonograph Company, the Edison Phonograph
Company and the Edison Phonograph Works, party of
the second part, witnessed:

WHEREAS the New York Phonograph Company has
heretofore brought several hundred suits in the Su-
preme Court of the State of New York, for Westchester
County, through Samuel F. Hyman, as attorney against
various jobbers and dealers of the National Phonograph
Company in the State of New York, which suits are

now pending in said Court and also in the Court of 113
Appeals of the State of New York; and

WHEREAS the parties to this agreement desire that
all of said suits shall be compromised and settled and
all of said actions discontinued, upon the payment of
the sum of Twenty thousand dollars (\$20,000) cash by
the party of the second part to the party of the first
part;

NOW, THEREFORE, for and in consideration of
the mutual covenants and agreements herein
contained and of the sum of One dollar each to the 114
other in hand paid, the receipt of which is hereby
acknowledged, the parties hereto hereby agree as fol-
lows:

FIRST: The party of the first part will procure and
deliver to the party of the second part, upon the pay-
ment of the sum of Twenty thousand dollars (\$20,000)
by the party of the second part to the party of the first
part, on or before April 9, 1909, at six o'clock P. M.,
consents to discontinue each and all of said suits now
pending in the Supreme Court for Westchester County 115
and in the Court of Appeals of the State of New
York in which the party of the first part is plaintiff,
executed by the party of the first part. (But nothing
herein contained shall be construed as an obligation
on the party of the first part to deliver to the party of
the second part the consent of the said Samuel F.
Hyman to the discontinuance of said suits).

SECOND: The party of the first part further cove-
nants that upon the payment of the sum of Twenty
thousand dollars (\$20,000) in the manner aforesaid, it 116
will procure and deliver good and effective general re-
leases running to all of said jobbers and dealers in
said suits, whereby they shall be released from any
and all causes of action for which the said actions are
now pending against them.

THIRD: The party of the first part, represents to the
party of the second part the only contract existing
between the party of the first part and Samuel F.
Hyman providing for the prosecution of said suits
against jobbers and dealers of the National Phono-
graph Company is contained in the following letter:

117 "NEW YORK PHONOGRAPH COMPANY.
APRIL 19, 1906.

"SAMUEL F. HYMAN,
302 Broadway,
New York City.

"DEAR SIR:

"You are hereby retained as counsel for this company to bring and prosecute actions or proceedings against such parties as we may indicate to you, to recover from them, damages for violation of our exclusive phonograph contracts for the State of New York, such suits to be brought in the name of this company at White Plains or elsewhere. As a compensation for your services as attorney, you will receive fifty per cent. of the total amount of money collected as the result of such suits or otherwise, together with the costs recovered. All the expenses of such prosecutions, however, are to be paid by you.

119 "JAMES L. ANDER,
General Manager."
(Seal of New York Phonograph Company)

Attest:
H. M. FURNON,
Vice-President."

And that no other contract or agreement exists between said Samuel F. Hyman in relation to said suits, and that the said Hyman has always acted and is now 120 acting pursuant to the aforesaid letter; that the said Hyman has paid or caused to be paid all the expenses in said suits, and that the party of the first part has paid no material part, if any, of such expenses.

Upon such representation the party of the second part will, upon the consummation of this contract, deliver to the party of the first part an indemnity agreement under which the National Phonograph Company will agree to indemnify the party of the first part against any damage which it may sustain by reason of any recovery which said Samuel F. Hyman may obtain on account of profes-

sional services rendered by him to said party of the 131 first part in said suits heretofore referred to against jobbers and dealers of the National Phonograph Company.

FOURTH: The parties hereto hereby agree that all documents be delivered and all moneys be paid on or before April 9, 1906, at 6:00 o'clock P. M., at the office of the National Phonograph Company, No. 10 Fifth Avenue, Manhattan, City of New York, or at such other time and place as the parties hereto may consent to in writing. 129

FIFTH: It is mutually understood and agreed that, if the papers prepared by Tomlinson, Tompkins & Tomlinson in connection with this settlement shall not be approved by Edward W. Hatch, counsel for the party of the second part, and the party of the first part refuses or is unable to have papers in the form proposed by Edward W. Hatch signed and executed, and for this reason the party of the second part fails to pay the Twenty thousand dollars (\$20,000) to be paid hereunder on or before April 9, 1906, at six 132 o'clock P. M., then this agreement shall be null and void.

In witness whereof the New York Phonograph Company has caused these presents to be executed by its duly authorized agent, James L. Anden, and its corporate seal to be hereto affixed, and the said Frank L. Dyer has hereunto set his hand and seal the day and year first above written.

NEW YORK PHONOGRAPH COMPANY,
By JAMES L. ANDEN, 124
Secretary.

(SEAL)
FRANK L. DYER, for and on behalf of THOS.
A. EDISON, National Phonograph Com-
pany, Edison Phonograph Works,
and Edison Phonograph Company.

{ Seal of New York
Phonograph Company. }

In the presence of—
Geo. R. ALLEN,
JANE M. LAWRENCE.

NEW YORK SUPREME **Court.**
COUNTY OF WESTCHESTER

New York Phonograph Company,
Plaintiff,

-against-

Siegel-Cooper Company,
Defendant.

Answering Affidavits of
Frank L. Dyer, Melville Church,
Twight Macdonald and Joseph P.
McCabe

ROBINSON, BIDDLE & BENEDICT,
Attorneys for Defts
No. 79 WALL STREET,
BOROUGH OF MANHATTAN,
NEW YORK CITY.

Due service of which

is hereby admitted, this

day of

Sir: You will please take notice that the within is a copy of
duly entered in the office of the Clerk of
at the
the
Day of
190
Dated New York,
190
Years, etc.

ROBINSON BIDDLE & BENEDICT,
for
No. 79 WALL STREET,
BOROUGH OF MANHATTAN, N. Y.

City of New York, on

which was

Pol. 1

NEW YORK SUPREME COURT,
COUNTY OF WESTCHESTER.

-----X
New York Phonograph Company, :
Plaintiff, :
-Against- :
Siegel-Cooper Company, :
Defendant. :
-----X

STATE OF NEW YORK,)
: SS:
COUNTY OF NEW YORK,)

2

FRANK L. DYER, being duly sworn, deposes and
says:

3

That he resides in Montclair, New Jersey, and
is the President of the National Phonograph Company and
also general counsel to said Company and to Thomas A.
Edison, the Edison Phonograph Company and the Edison
Phonograph Works. That as such President and General
Counsel he had sole and complete charge of the matter
of negotiating and concluding the recent settlement of all
the differences, litigated and unlitigated, existing
between the said Thomas A. Edison, Edison Phonograph Com-
pany, Edison Phonograph Works and National Phonograph
Company and the various individuals allied with them,
on the one part, and the New York Phonograph Company,
James L. Andem, individually, James L. Andem for and on
behalf of the Kansas Phonograph Company, Ohio Phonograph
Company, State Phonograph Company of Illinois, Kentucky

4

Phonograph Company, Missouri Phonograph Company, Minnesota Phonograph Company, Wisconsin Phonograph Company and New England Phonograph Company (hereinafter referred to as the "local companies"), and various individuals, on the other part.

That each of the above-mentioned local companies had acquired an alleged exclusive franchise for the sale of Edison phonographs and supplies for its respective State similar to the contract owned by the New York Phonograph Company.

5

That in the years 1900 and 1901 James L. Andem had entered into a contract with the New York Phonograph Company and also with each of the above-mentioned local companies, whereby the said Andem was given the exclusive right to prosecute, compromise and settle any and all suits, claims and demands of the said New York Phonograph Company and said local companies against Thomas A. Edison, the Edison Phonograph Company, the Edison Phonograph Works and the National Phonograph Company and others and to adjust the same by such compromise or settlement as the said Andem, acting under the advice of counsel, might deem advantageous. The said Andem had agreed to pay all the costs and expenses incident to the prosecution of such litigation, and was to receive and retain as his full compensation therefor a sum equal to sixty per cent. of any and all moneys he might receive or collect from any and all of said parties by reason of the prosecution, settlement and adjustment of the rights, claims and demands of each of the local companies aforesaid (except the Kentucky

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7 Phonograph Company, which agreed to give him forty per cent. and the Ohio Phonograph Company, which, deponent is informed, the said Andem owned outright and he would therefore doubtless receive the whole of any recovery it might make. That acting under these contracts the said Andem had brought a separate suit in the United States Circuit Court for the District of New Jersey in behalf of each of the foregoing local companies, all of which suits were pending at the time of the settlement of the negotiations hereinafter referred to, but have since been discontinued pursuant to the settlement agreements.

8 They were as follows:

1. Ohio Phonograph Company and the Edison Phonograph Company (of Ohio), their successors and assigns,

-vs-

Thomas A. Edison, Edison Phonograph Company, Edison Phonograph Works and National Phonograph Company.

2. Wisconsin Phonograph Company

-vs-

9 Same Defendants.

3. Missouri Phonograph Company

-vs-

Same Defendants.

4. New England Phonograph Company

-vs-

Same Defendants.

10 5. State Phonograph Company of Illinois

-vs-

Same Defendants.

6. Minnesota Phonograph Company

-vs-

Same Defendants.

7. Kentucky Phonograph Company

-vs-

Same Defendants.

8. Kansas Phonograph Company

-vs-

Same Defendants.

11

That, in addition to the foregoing, there were pending in the United States Circuit Court, for the Southern District of New York, the following suits:

9. New York Phonograph Company, complainant,

-vs-

Thomas A. Edison, Edison Phonograph Company, Edison Phonograph Works and National Phonograph Company, defendants.

10. New York Phonograph Company, Complainant,

-vs-

John S. Jones, Defendant.
(This suit had been originally brought in the Supreme Court for Westchester County and was removed by the defendant to the Federal Court).

12

11. John E. Helm, Complainant,

-vs-

New York Phonograph Company, impleaded with American Graphophone Company et al., Defendants.

12. New England Phonograph Company, Complainant,

-vs-

James L. Andem, Elisha Camp and Louis Hicks, Defendants.

13

And there were also pending in the Supreme Court of the State of New York, for the County of New York, the following suits:

13. National Phonograph Company, Plaintiff,
-vs-
New York Phonograph Company, impleaded
with Henry Durant Cheever, Executor, etc.,
Defendants.
(This suit involved the question of the
right to the ownership of some 1017
shares of the capital stock of the New York
Phonograph Company).

14

14. William Pelser, Plaintiff,
-vs-
James I. Adam, Defendant.

15. New England Phonograph Company, Plaintiff,
-vs-
Brayton Ives et al., Defendants.

And there was pending in the Supreme Court for Kings County an action entitled:

16. Lemuel E. Evans, Plaintiff,
-vs-
New York Phonograph Company, Defendant.

15

That in addition to the foregoing suits, there were pending the so-called Hyman suits, which aggregated about 400 in number, and all of which were brought in the Supreme Court for Westchester County by the New York Phonograph Company, plaintiff, against various jobbers and dealers in Edison phonographs and supplies in the State of New York, defendants. The same printed form of complaint was used in all 400 suits and was almost a verbatim copy of the complaint prepared and used by Mr. Camp and Mr. Hicks in the federal suit brought by the New York Phonograph Company against the National Phonograph Company, impleaded with others, in the Southern District of New York. The same printed form of answer was interposed in almost all of the Hyman suits.

17

The suit brought in the United States Circuit Court, for the Southern District of New York by the New York Phonograph Company, complainant, against Thomas A. Edison, Edison Phonograph Company, Edison Phonograph Works and National Phonograph Company, defendants had been most bitterly contested by the defendants from the day it began,--i. e., April 18, 1901,--down to the date of the settlement. The voluminous record that was made has been detailed in other affidavits submitted on this motion.

17

Elisha M. Camp was solicitor of record for the complainant in the litigation, and Louis Hicks was counsel for complainant. Robinson, Biddle & Ward (which firm recently changed its name to Robinson, Biddle & Benedict) acted throughout the litigation as solicitors for the defendants.

18

In this connection deponent deems it only fair to say that throughout the greater part of the litigation the complainant's case was conducted practically single-handed by its counsel, Louis Hicks, and to him, more than to any one else, is due the credit of achieving the victory for the complainant which finally resulted in the settlement of all the pending litigations above mentioned. Deponent is informed and verily believes that the said Hicks had had a disagreement with the complainant shortly before the settlement was effected, and in order that the said Hicks might not in any way attempt to interfere with the carrying out of the settlement, the defendants agreed with the said Hicks separately and apart, to pay to him, and did pay to him, in addition to the \$495,000 paid to

19 the New York Phonograph Company and James L. Andes above-mentioned, the sum of \$30,000.

After over four years of laborious work, Mr. Hicks obtained in behalf of the complainant in the last-mentioned suit, on the 2nd day of May, 1905, an interlocutory decree awarding an injunction against the defendant National Phonograph Company, and directing an accounting of the profits made by it by reason of its wrongful invasion of complainant's rights. The defendants appealed from this decree to the United States Circuit Court of Appeals for the Second Circuit, and gave a bond to stay the issuance of an injunction pending appeal. Thereafter the decree appealed from was in all respects affirmed on the opinions of Hazel, J., in the Court below, and on March 26, 1906, a writ of injunction issued out of the Clerk's Office of the United States Circuit Court for the Southern District of New York, pursuant to the aforesaid decree of May 2, 1905, as affirmed. The complainant had submitted a proposed decree to Judge Hazel, broadly enjoining the defendant National Phonograph Company from selling, etc., phonographs and supplies therefor within the State of New York, and the defendants had submitted a proposed decree enjoining the defendants from selling, etc., phonographs and supplies therefor within the State of New York in violation of the rights of the complainant under certain contracts as extended bearing date October 12, 1888, between the North American Phonograph Company and the Metropolitan Phonograph Company, and also between Thomas A. Edison, the Edison Phonograph

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Company, the Edison Phonograph Works, the North American
Phonograph Company and Jesse H. Lippincott, and a contract
bearing date the 6th day of February, 1889, between the
North American Phonograph Company and John P. Haines;
and a contract bearing date July 1, 1893, between com-
plainant and the North American Phonograph Company.

Judge Hazel chose and signed the form proposed by defend-
ant.

23

After the issuance of the injunction as afore-
said, the National Phonograph Company, at an expense of
thousands of dollars, eliminated from its manufacture of
phonographs, such patents as it was advised the complain-
ant's contract rights attached to and as to which patents
the National Phonograph Company had been enjoined as
aforesaid, and went on manufacturing phonographs and
selling them f. o. b. cars at Orange, New Jersey, under the
belief that it was not in any way disobeying the afore-
said injunction.

24

To the surprise of deponent, complainant did not
proceed with the accounting which had been awarded to it
and which covered the entire business of the National
Phonograph Company in New York State for a period of many
years, and which, therefore, might result in a big judg-
ment. Deponent was subsequently informed that the
reason complainant did not proceed with said accounting
was due to the fact that there had been a disagreement
between the complainant and its solicitor of record, Elisha
K. Camp. Proceedings were subsequently had in the United
States Circuit Court, for the Southern District of New
York, whereby the said Camp was finally removed from the
case as solicitor of record, and Messrs. Tomlinson,

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Tompkins & Tomlinson were substituted in his stead.
Mr. Hicks continued to act as counsel.

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In the month of June, 1906, some months prior to Mr. Camp's removal from the suit, the New York Phonograph Company, through Mr. Samuel F. Hyman as attorney, began to bring the suits hereinbefore referred to in the Supreme Court for Westchester County against the various jobbers and dealers in Edison phonographs and supplies in the State of New York, which suits, at the time of the settlement, amounted in number to about 400. Only one of these cases was tried,--namely, New York Phonograph Company against Solomon K. Davoga. This case came on before Mr. Justice Keogh at Special Term, and resulted in an interlocutory judgment in favor of the plaintiff and against the defendant, directing that an injunction issue, and awarding an accounting as to the profits. From this interlocutory judgment the defendant appealed to the Appellate Division for the Second Department, and the interlocutory judgment appealed from was unanimously reversed, Mr. Justice Miller writing the opinion and deciding, among other things, that

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"the conclusion seems inevitable that whatever rights the plaintiff has as against the defendant or his vendor are patent, not contract rights. If so, any suit to enforce these rights arises under the patent laws of the United States, and the Courts of this State cannot take jurisdiction of it."

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From this judgment of reversal the plaintiff has appealed as a matter of right to the Court of Appeals, which appeal is now pending and is No. 599 on the present calendar of that Court.

While the aforesaid appeal was pending in the Appellate Division, the New York Phonograph Company, through its solicitors, Tomlinson, Tompkins & Tomlinson, and its counsel, Louis Hicks, made a motion in the federal suit to punish the National Phonograph Company for contempt of the injunction issued therein on March 28, 1906. This motion came on before Mr. Justice Hazel, who had decided the case originally, and he found the defendant in contempt of the said injunction, in that it had, after service and notice of said injunction, sold and used, and caused to be sold and used, and made, sold and licensed for use, phonographs and phonograph supplies within the State of New York containing, or made according to, the inventions and improvements made by Thomas A. Edison during the period prior to February 18, 1896, of the following named patents, to wit:

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- No. 484,562, dated October 12, 1889.
- 430,274 and 430,278, dated June 17, 1890.
- 414,760, dated November 12, 1888.
- 448,780, dated March 24, 1891.
- 465,972, dated December 19, 1891.
- 484,883 and 484,884, dated October 16, 1892.
- 499,879, dated June 20, 1893.
- 513,697, dated January 23, 1894.
- 713,209, dated November 11, 1902.

31

For this contempt he fined the defendant National Phonograph Company \$2500, \$15,000 thereof to be payable to the complainant, New York Phonograph Company, and the balance to the United States. A decree was entered accordingly on April 6, 1906. From this decree the defendant National Phonograph Company sued out a writ of error to the United States Circuit Court of Appeals,

claiming, among other things, that the contempt decree was erroneous, in that defendant had the right to use all the patents mentioned, by reason of the expiration of shorter term foreign patents. While this writ of error was pending, the Appellate Division rendered its decision in the Davega case, as above outlined.

The writ of error was argued in the United States Circuit Court of Appeals in the early part of 1909, and on March 16, 1909, the Court rendered its decision affirming the judgment of contempt appealed from, but declining to adopt Judge Hazel's reasoning. Judge Hazel had said that the National Phonograph Company could not sell phonographs that embodied the certain patents above-mentioned in their manufacture, whereas the Circuit Court of Appeals, Judge Noyes writing the opinion, said, in a dictum, that the injunction should be so construed as to enjoin the National Phonograph Company from selling any phonographs or supplies.

The defendant first gave notice that it would apply to the United States Supreme Court for a writ of certiorari to review the decision of the United States Circuit Court of Appeals, and forthwith made a motion to stay the issuance of the mandate in the latter court pending the determination of the United States Supreme Court on such application. Shortly thereafter the defendant withdrew this notice and filed its brief in the United States Circuit Court of Appeals for a rehearing of the case, on the ground that the Court had erred in

35 its interpretation of Judge Hazel's decree, and had further erred in proceeding as though it were sitting as a court of equity in review of a decree, instead of as a court of law in review of a judgment at law in a criminal case under writ of error, and had further erred in giving any such broad interpretation to the injunction; because the effect of it would be that the National Phonograph Company would not have been heard and would have had no opportunity of being heard upon such question, since the question covered by the Court's dictum was not raised in the assignments of error and was not argued by the plaintiff in error.

36 Prior to the decision of Judge Hoyes, Mr. Hicks had approached Mr. Buckingham, one of the counsel for the defendant, in an effort to effect a settlement of the litigation. Negotiations were had by this deponent, Mr. Buckingham, Mr. Hicks and counsel for the New York Phonograph Company relating to the settlement, and finally Mr. Hicks reported that the New York Phonograph Company and Mr. Andem, individually, and representing the outside local companies, would accept \$180,000 in full settlement of all their rights, exclusive of whatever rights Mr. Hyman might have in his cases, and asked if deponent would pay that amount. Deponent reserved his decision a few days, and told Mr. Hicks to begin the preparation of papers based on that proposition. Mr. Hicks thereupon prepared an elaborate set of papers embodying the proposed settlement for \$180,000, and submitted them to deponent for his examination and approval. At this point Mr. Buckingham suggested to Mr. Tomlinson that they should go jointly to

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the United States Circuit Court of Appeals and inform the Court of the pending settlement, and ask it to delay the possible handing down of its opinion on the writ of error upon the judgment of contempt for a reasonable time in order that counsel might get the papers ready and complete the settlement. Mr. Tomlinson, deponent is informed, however, declined to join in such a request to the court, unless he had a definite assurance that the defendant had agreed to accept the offer of \$180,000 aforesaid.

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Deponent has been informed that Mr. Buckingham stated to Mr. Tomlinson that he felt assured that the settlement would go through, but that he could not say so positively without further communication with his client, whereupon Mr. Tomlinson refused to join in the above request unless said proposition should be first accepted.

At this stage of the negotiations the said Buckingham, who was seriously and dangerously ill, was compelled to give up all business matters, and practically from that moment has been unable to take any part whatever in the negotiations or settlement resulting therefrom, and before anything further could be done by those who took his place, the Circuit Court of Appeals handed down its decision affirming the judgment of contempt.

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As soon as this decision was rendered, the complainant and Mr. Andem declined to go any further with their offer to take \$180,000, and all negotiations for that settlement were off.

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A few days later, however, the complainant's solicitors came back and raised their demand to \$750,000. Negotiations were again had by deponent with the solicitors

for the New York Phonograph Company, and on March 27, 1909, they submitted to deponent, in behalf of the New York Phonograph Company and James L. Andem, individually, and acting for the other local companies, an offer to accept \$425,000 in full settlement of the claims of said Andem and of all said local companies, except the claims arising out of the causes of action for which the Hyman suits had been brought against the jobbers and dealers. Deponent thereupon consulted his counsel Judge Hatch, Mr. Church and Mr. Clarke, as to the advisability of accepting this offer, and was advised by them that it would be unwise to pay out such a large sum of money, unless a full and complete settlement of all the litigations could be obtained thereby. Deponent had been informed by the solicitors for complainant that all the parties in interest were willing to settle for the round sum above mentioned, except Mr. Hyman, who, as deponent was informed, had stated to Mr. Tomlinson that he would not take less than \$100,000 for his interest. Deponent deemed this demand extravagant, and absolutely refused to pay any such sum to Mr. Hyman. Deponent further declined the offer above mentioned and made a counter proposition that he would pay the \$425,000 if, and only if, every claim, including the Hyman causes of action should be released by the parties. This counter proposition was made by deponent after consulting his counsel as to whether Mr. Hyman had a legal right to prevent the settlement, in spite of the fact that his own client was willing to make it, and being advised by both Judge Hatch and Mr. Clarke that deponent had the legal right to make a settlement in good faith, with the New York Phonograph Company and Mr. Andem, individually, and representing

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the other local companies, with or without Mr. Hyman's consent; but that before making the settlement some one should be sent to Mr. Hyman and inform him of the fact that a settlement was about to take place and endeavoring to get him to join in it by paying to him a reasonable sum. James L. Andem and the New York Phonograph Company and its solicitors had prior to this time represented and warranted to deponent and all the interests represented by him that the said Samuel F. Hyman had commenced all of said suits then pending in the Supreme Court for Westchester County and in the Court of Appeals for the State of New York under a contract with the New York Phonograph Company contained in a letter dated April 19, 1906, from James L. Andem, General Manager of said New York Phonograph Company to Samuel F. Hyman, a copy of which has been annexed to the petitioner's motion papers herein, and they had further represented and warranted to deponent and the interests represented by him that the said letter was the only authority or agreement under which said Samuel F. Hyman had commenced and prosecuted said suits, and was the only authority or agreement which the said Samuel F. Hyman had ever had to bring or prosecute said suits, and was the only contract or obligation which the New York Phonograph Company had ever entered into with the said Samuel F. Hyman or with any one in his behalf for the institution or prosecution of or in any way concerning said suits, and that the said Samuel F. Hyman had always acted and was then acting pursuant to the said letter, and that the said Samuel F. Hyman had paid, or caused to be paid, all the expenses of said suits, and that the New York

47 Phonograph Company had paid no material part, if any, of such expenses, nor had the said Samuel P. Hyman, at any time since the date of the said letter, rendered any bill to said New York Phonograph Company or to any of its officers, directors or agents on account of any professional services or any expenses whatsoever arising from or in connection with the institution, existence or prosecution of said suits.

48 That deponent, prior to the settlement, had no notice whatever of Mr. Hyman's alleged contract relating to the exclusive right to the amusement features of the Edison phonograph in New York State.

49 That when deponent submitted a copy of the aforesaid letter to Mr. Hyman dated April 19, 1906, to his counsel Judge Hatch and Mr. Clarke, they both stated to him that if that was the only agreement or authority under which Mr. Hyman had instituted and was prosecuting his suits, then, in their judgment, such contract was champertous, and that Mr. Hyman was therefore not entitled to any recovery; but that nevertheless they thought it advisable to offer to pay to Mr. Hyman a fair sum for his interest, regardless of the champertous feature of his contract.

The question then arose as to what was a fair sum for his interest. Deponent had been informed by complainant's solicitors and by his own counsel above-mentioned, and believed, that the said Hyman had never taken any part, directly or indirectly, either as attorney of record or as counsel, in any of the Federal suits, but had appeared

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solely for the New York Phonograph Company in the suits brought by him in the Supreme Court for Westchester County against various jobbers and dealers in Edison phonographs and supplies in the State of New York. In fact deponent and all of his counsel who have been associated with him since the institution of the suits against the jobbers and dealers have always referred to such suits as "the Hyman suits".

51

As had been hereinbefore shown, the first of Mr. Hyman's suits was brought in June, 1906. For five years prior thereto the New York Phonograph Company had been litigating in its main suit in the United States Circuit Court for the Southern District of New York and also in many other jurisdictions, all of which litigation was bitterly fought and contested, even down to the date of the settlement and was all covered by and terminated with said settlement; and in none of this litigation did Mr. Hyman play any part whatever. He has tried

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only one of the suits that he did bring,--namely, New York Phonograph Company vs. Solomon B. Davega, which trial resulted, as above set forth, in an interlocutory judgment directing that an injunction issue against the defendant and awarding the plaintiff an accounting, which judgment on appeal was unanimously reversed by the Appellate Division, on the ground, among others, that the State Courts had no jurisdiction because patent questions were involved and were solely within the cognizance of the Federal Courts.

53 Deponent was also advised by his said counsel that Mr. Hyman had appealed as a matter of right to the Court of Appeals from the order of the Appellate Division unanimously reversing the interlocutory judgment entered after the trial before Mr. Justice Keogh, and that the Court of Appeals was without jurisdiction to hear such an appeal, and inasmuch as the complaints in all the suits brought by Mr. Hyman were identical in every respect except as to the name of the defendant, and the answers interposed were in all respects identical except as to the name of the defendant, and, in a few cases as to special additional defenses pleaded, deponent was advised by his counsel and concluded that all of the suits brought by Mr. Hyman must be dismissed on the strength of the Appellate Division's decision in the Davega case.

54 Such was the situation when the settlement negotiations were brought on and carried out. Deponent had never regarded the Hyman suits as dangerous in themselves, and especially was this true after the announcement of the decision of the Appellate Division in the Davega case adopting the contention which the defendant had always strenuously urged,--viz., that the State Courts had no jurisdiction of the cause of action because patent questions were involved which were solely cognizable by the Federal Courts.

55 After careful consideration and consultations with counsel and the parties in interest, deponent concluded that he would not pay more than \$20,000 in full settlement of all the cases wherein Mr. Hyman was attorney

55 of record, which amount he believed to be eminently just and fair to Mr. Hyman. In making this statement deponent does not desire or mean to belittle the work or the services of Mr. Hyman in the slightest degree. On the contrary, deponent has been informed by his counsel, and believes, that Mr. Hyman has always shown great activity and industry in the prosecution of his suits, but when the question arises as to the value of the work of the respective attorneys in this long litigation, deponent confidently states that Mr. Louis Hicks deserves by far the

57 largest amount of credit for the complainant's success, not only because he did nearly all of the original work, but also because of the able way in which he conducted its litigation over a period of seven or eight years and finally obtained, in spite of the opposition of many distinguished counsel, an injunction and decree for an accounting in the Federal case. Inasmuch as this accounting would have applied to a period of many years and to the whole business done by the National Phonograph Company

58 in the State of New York during such period, the danger of the possible judgment therein, if no settlement had been effected, would have been far greater than any other possible item of damage presented in the litigation.

Deponent had also been advised by his said counsel that in their opinion the fifty per cent. contingency compensation mentioned in Mr. Hyman's contract, if properly construed, should be limited to the total amount of money collected by suit, compromise or otherwise from the cases brought and the actions or proceedings prosecuted by Mr. Hyman against such parties as the New York Phonograph Company may have designated, pursuant to the pro-

visions contained in the said contract.

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With all the foregoing facts in mind and on the basis that \$180,000 was going to be paid for all the New York Phonograph Company's rights, deponent concluded that the payment of \$20,000 for the so-called Hyman suite was more than fair to Mr. Hyman. Deponent thereupon sent one of his associate counsel, Mr. Melville Church, to Mr. Hyman, with instructions to inform him of the then pending negotiations, of which, deponent understood, Mr. Hyman had already had notice, and that deponent offered to pay for the Hyman cases \$20,000, one-half thereof to Mr. Hyman upon his showing a contract entitling him to fifty per cent.

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thereof; that Mr. Church accordingly offered Mr. Hyman \$10,000, and subsequently, on being informed that Mr. Hyman's expenses to date had amounted to \$15,000, asked Mr. Hyman if he would accept \$10,000 in addition to his disbursements, or the sum of \$25,000, which Mr. Hyman, as deponent is informed and believes, refused to accept. What took place at the conference between Mr. Church and Mr. Hyman (at which conference Messrs. Dwight Macdonald and Joseph F. McCoy were also present) will more particularly appear from the affidavit of Melville Church, verified April 9, 1909, and the corroborative affidavits of Dwight Macdonald and Joseph F. McCoy, verified April 27, 1909, all of which are submitted herewith and made a part hereof.

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In negotiating the settlement above mentioned, deponent throughout felt that so many persons were interested in a contingent way or otherwise in the moneys to

62 be paid to the plaintiff companies and Mr. Andem upon the settlement, that the solicitors representing them would be unable to carry out their agreements of settlement, and hence deponent deemed it wise and insisted that his attorneys should obtain formal written contracts of settlement and that some earnest money should be paid to bind the bargain. Such contracts were entered into on the 3rd day of April, 1909, and copies thereof have been

63 annexed to the answering affidavits upon this motion. By these contracts the parties agreed, as more particularly appears therein, that the settlement should take place on or before 6:00 P.M. of April 9th. This date was selected as affording the attorneys a reasonable time in which to prepare the necessary papers with which to conclude the settlement. On this settlement the New York Phonograph Company, Mr. Andem and their counsel absolutely refused to deliver any papers until the moneys were paid over, and deponent admits that he was equally unwilling

64 to pay any moneys until the papers were approved by his counsel and delivered to him; hence the closing of the settlement agreements required the simultaneous delivery of the general releases and other papers and the payment of the moneys. Deponent's regular depository was a bank in Newark, New Jersey, where the moneys to be paid of the settlements were deposited. When counsel had selected April 9th as the time for closing, they were unaware that the 9th of April was a legal holiday in the State of New Jersey, and when deponent informed them of this fact on the morning of the 8th of April, the prepar-

65

ation of the papers was rushed in an effort to close the transaction before the holiday and thereby avoid, if possible, repudiation by the plaintiff of its agreement to settle. Deponent made arrangements with the Bank to keep open until all the parties could complete the papers and get out to Newark, which happened shortly before midnight of the 8th of April.

66

In making this settlement deponent paid out for the account of the New York Phonograph Company \$150,000.00, in three checks for the respective sums of \$106,138.60, \$20,000 and \$23,861.40; and in making the settlement as to the interest of Mr. Andem, individually and as representing the other local phonograph companies, Mr. Andem was limited in effecting such settlement by his powers of attorney as follows: He could not settle the New England Phonograph Company case for less than \$10,000; he could not settle the State Phonograph Company of Illinois case for less than \$20,000; he could not settle the Minnesota Phonograph Company case for less than \$20,000; he could not settle the Missouri Phonograph Company case for less than \$40,000; and he could not settle the New York Phonograph Company case for less than \$10,000. As to the Ohio Phonograph

67

Carried forward, \$150,000.00

68

Brought forward

\$160,000.00

Company, the Wisconsin Phonograph Company and the Kansas Phonograph Company cases Mr. Andem's contract gave him authority to settle for such sum as, under the advice of counsel, he might see fit; hence, in completing the settlement, deponent paid out for the account of James L. Andem, individually and for the account of the above-mentioned local phonograph companies, the following checks:

69

\$14,075.35
 37,500.00
 6,000.00
 2,250.00
 12,500.00
 38,770.47
 20,000.00
 4,212.04
 67,242.18
 67,242.19
 103.89
103.88

\$270,000.00

Earnest money,

5,000.00275,000.00

70

Total,

\$425,000.00

In addition to the foregoing sums, and absolutely separate and apart therefrom, deponent paid Louis Hicks the sum of \$30,000.

On making the aforesaid payments, deponent received general releases and consents to the discontinuance of all litigations now pending, as heretofore set forth, and consents to the cancellation of all bonds and

the vacation of all decrees and injunctions therein, including the suits wherein Mr. Hyman has appeared as attorney of record for the plaintiff which are now pending in the Supreme Court for Westchester County.

In effecting this settlement deponent had no other desire than to make as fair a settlement to all interested as the circumstances would permit, and when deponent was informed that Mr. Hyman alone stood out for what deponent believed to be an extravagant sum, deponent took every reasonable precaution not inconsistent with the safety and rights of the parties for whom he was acting to get Mr. Hyman to take a reasonable sum for his interest.

Frank L. Dyer

Sworn to before me this)
29th day of April, 1909.)

William F. Allen
Notary Public
Westchester Co.

**Legal Department Records
Phonograph - Case Files**

Thomas A. Edison, Inc. v. United States Phonograph Company

This folder contains material pertaining to the suit brought by Thomas A. Edison, Inc., against the United States Phonograph Co. in the U.S. Circuit Court for the Southern District of New York. The case was initiated in June 1911 and involved Edison's U.S. Patent 964,221 on a 200-thread record. The selected items consist of the bill of complaint, along with testimony by Walter H. Miller and George B. Redfearn regarding early technical and commercial experimentation with 200-thread records. Miller's and Redfearn's testimonies were entered into evidence in two companion suits against the United States Phonograph Co., which involved Edison's reissued patent on a button-ball stylus (U.S. Patent Reissue 11,857) and Peter Weber's reissued patent (U.S. Patent Reissue 13,120) on a four-minute stylus. Among the documents not selected is the application file for Edison's U.S. Patent 964,221. Related material can be found in "Phonograph - Correspondence - General."

UNITED STATES CIRCUIT COURT
SOUTHERN DISTRICT OF NEW YORK.

THOMAS A. EDISON, INCORPORATED,
Complainant,

vs.

UNITED STATES PHONOGRAPH CO.,
Defendant.

In Equity on
U. S. Letters Patent
No. 964,221.

BILL OF COMPLAINT.

Solicitors for Complainant.

Herbert H. Dyke, Esq.,
McCarter & English,
758 Broad St., Newark, N. J.,
Of Counsel for Complainant.

Legal Dept. File

IN THE UNITED STATES CIRCUIT COURT
SOUTHERN DISTRICT OF NEW YORK.

THOMAS A. EDISON, INCORPORATED,)
Complainant,)
vs.) In Equity on
U. S. Letters Patent
No. 964,222.
UNITED STATES PHOTOGRAPH COMPANY,)
Defendant.)

TO THE HONORABLE THE JUDGES OF THE CIRCUIT
COURT OF THE UNITED STATES FOR THE SOUTH-
ERN DISTRICT OF NEW YORK.

THOMAS A. EDISON, INCORPORATED, a corporation created, organized and existing under and by virtue of the laws of the State of New Jersey, and having its principal office at West Orange, County of Essex, and State of New Jersey, and a citizen of the State of New Jersey, brings this, its Bill of Complaint, against the UNITED STATES PHOTOGRAPH COMPANY, a corporation created, organized and existing under and by virtue of the laws of the State of Ohio, and having its principal office at Cleveland in said State, and a citizen of the State of Ohio, and having a regular and established place of business at No. 5-7 Union Square, Borough of Manhattan, in the City, County and State of New York, within this District, wherein some of the acts of infringement hereinafter complained of were committed.

And thereupon your orator complains and says:-

1. That heretofore and before the 3rd. day of January, 1907, THOMAS A. EDISON of Llewellyn Park, Orange, County of Essex and State of New Jersey, and a citizen of the United States, was the original, first, and sole inventor of a certain new and useful improvement in SOUND-RECORDS, fully described in the Letters Patent hereinafter mentioned, and which had not been known or used by others in this country before his invention or discovery thereof, and which had not been patented or described in any printed publication in this or any foreign country before his invention or discovery thereof or more than two years prior to his application for Letters Patent therefor hereinafter mentioned; and which said invention was not first patented or caused to be patented by the said inventor or his legal representative or assigns in any country foreign to the United States on an application filed more than twelve months prior to the filing of his said application for Letters Patent of the United States; and which had not been in public use or on sale in the United States for more than two years prior to his said application, and which had not been abandoned.

2. That on or about the 3rd. day of January, 1907, the said Thomas A. Edison, being as aforesaid the original, first, and sole inventor or discoverer of the said improvement in Sound-Records, made application in writing to the Commissioner of Patents of the United States for the grant of Letters Patent therefor, and paid into the Treasury of the United States the fees required by law, and then and there fully and in all respects complied with all the necessary requirements and conditions of the Statutes of the United States in such cases made and provided.

3. That on or about the 26th. day of November, 1907, and before the issuance of Letters Patent on said improvement, said Thomas A. Edison, for a valuable consideration, by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office on the 27th. day of November, 1907, did sell, assign and transfer to the New Jersey Patent Company, a corporation of New Jersey, its successors or assigns, the entire right, title and interest in and to the aforesaid invention and in and to any Letters Patent of the United States which might be granted therefor, as by said assignment or a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

4. That due and legal proceedings were had on said application for Letters Patent, and that thereupon the Commissioner of Patents, having made due examination as to the novelty and utility of the said invention as provided by law, caused to be issued unto the said New Jersey Patent Company, Letters Patent in due form of law under the seal of the Patent Office of the United States, signed by the Commissioner of Patents and bearing date the 12th. day of July, 1910, and numbered 964,221, and that said Letters Patent did grant unto said New Jersey Patent Company and unto its successors and assigns for the term of seventeen years from the date thereof, the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof, as by reference to said Letters Patent or to a duly authenticated copy thereof, ready in court to be produced, will more fully and at large appear.

5. That thereafter, and on or about the 20th day of June, 1911, said New Jersey Patent Company, being the owner of the said invention and Letters Patent, for a valuable consideration, by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office on the 21st. day of June, 1911, did sell, assign and transfer unto your orator, Thomas A. Edison, Incorporated, a corporation organized and existing under and by virtue of the laws of the State of New Jersey, its successors and assigns, the whole interest in and to the aforesaid Letters Patent of the United States, No. 964,221, and the inventions covered thereby, together with the right to sue for and recover to its own use damages and profits for all past infringements and violations of said Letters Patent, as by reference to said assignment or a duly authenticated copy thereof, ready in court to be produced, will more fully and at large appear. That your orator, Thomas A. Edison, Incorporated, is, save for the doings of defendant and others acting in concert with it, in the exclusive possession of said rights and privileges secured by said Letters Patent No. 964,221, and is entitled to the exclusive use, benefit and advantages of the said invention and improvements and to all claims for violation or infringement thereof.

6. That your orator is engaged in the manufacture of Sound-Records embodying the said improvement and invention, and is prepared and stands ready and is able to supply all public demands for the use of said invention of the aforesaid Letters Patent.

7. That the defendant, well knowing the premises and the rights secured to your orator as aforesaid, and contriving to injure your orator and to deprive it of the benefit and advantages which might and otherwise would accrue unto your orator from the said invention, after the grant of said Letters Patent No. 964,221 and before the commencement of this suit, within the Southern District of New York at its regular and established place of business at No. 5-7 Union Square, in the Borough of Manhattan, City, County and State of New York and elsewhere in the United States, without the license or allowance of your orator or of its predecessor in title, said New Jersey Patent Company, and against the will and protest of your orator, and of said New Jersey Patent Company, and in violation of the rights now vested in your orator did unlawfully and wrongfully make, use and sell and cause to be made, used and sold, and is now making using and selling and causing to be made, used and sold Sound-Records embodying, constructed and operating in accordance with the improvement and invention of the said Letters Patent as therein set forth and claimed, and that defendant still continues so to do, and that it threatens to continue the aforesaid unlawful acts to a large extent, all in defiance of the rights secured to your orator as aforesaid, and to its great and irreparable loss and injury, and by which your orator has been and still is being deprived of great gains and profits which it might and otherwise would have obtained, but which have been received and enjoyed by the said defendant through its said unlawful acts and doings.

8. That your orator has caused notice to be given to said defendant of said infringement and of the rights of your orator in the premises, and has requested defendant to desist and refrain therefrom; but defendant has disregarded said notice and has refused to desist from said infringement and still continues to make, use and sell Sound-Records embodying said invention; and your orator further shows that as to the number of Sound-Records which have been by the defendant as aforesaid unlawfully made, used and sold, and as to the extent of the gains and profits received and enjoyed by the said defendant from such unlawful making, use and sale your orator is ignorant and prays a discovery thereof.

9. That the manufacture, use and sale of Sound-Records embodying the invention set forth in the Letters Patent aforesaid by the defendant, and its preparation for and avowed determination to continue the same in disregard and defiance of the rights of your orator have the effect to encourage and induce others to venture to infringe said Letters Patent.

10. That your orator and its predecessor in title to the patent in suit, said New Jersey Patent Company, and all persons making under the authority of them or either of them devices employing the invention of said Letters Patent, No. 964,221, have given notice to the public that the same are patented, and have fixed thereon the word "Patented" together with the day and year on which said patent was granted, and have fixed to each package containing one or more of said devices a label containing the like notice.

And your orator therefore prays as follows:-

1. That the defendant may be required by a decree of this Honorable Court to account for and pay over to

your orator such gains and profits as have accrued or been received or earned by said defendant by reason of its said unlawful doings, and all such gains or profits as would have accrued to your orator and to its predecessor in title, New Jersey Patent Company, to whose rights your orator has succeeded, but for the unlawful doings of said defendant, and all damages your orator and its said predecessor in title have sustained thereby; and that the court may assess said damages and profits and may increase the damages to a sum not exceeding three times the amount thereof.

2. That the defendant be compelled by an order of this court to deliver up all the infringing Sound-Records in its possession.

3. That the said defendant, United States Phonograph Company, and its officers, servants, agents, attorneys, employes, workmen and confederates and each and every of them may be perpetually restrained and enjoined by an order of injunction of your Honorable Court from directly or indirectly making, using or selling any Sound-Records containing, employing, embodying or operating in accordance with the invention of the said Letters Patent; and from infringing upon or violating the said Letters Patent in any way whatsoever.

4. That your Honors will grant unto your orator a preliminary injunction issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendant and its officers, servants, agents, employes, workmen and confederates and each and every of them to the same purpose, tenor and effect as hereinafore prayed for with regard to the said perpetual injunction.

5. That the said defendant may be decreed to pay the costs of this suit.

6. That your orator may have such other and further relief as the equity of the case may require.

TO THE END, THEREFORE, that said defendant may, if it can, show why your orator should not have the relief prayed for, and may full, true and direct answer make, but not under oath, (answer under oath being hereby expressly waived) according to the best and utmost of its knowledge, remembrance and belief to the several matters hereinbefore averred and set forth as fully and particularly as if the same were repeated, paragraph by paragraph, and the said defendant thereto specifically interrogated, may it please your Honors to grant unto your orator a writ of subpoena ad respondendum, issuing out of and under the seal of this Honorable Court, directed to the said defendant, United States Phonograph Company, commanding it to appear and make answer to this Bill of Complaint and to perform and abide by such orders and decrees as to this court may seem just.

And your orator will ever pray, etc.

THOMAS A. EDISON, INCORPORATED,

By

Frank L. Dyer
President.

Solicitors for Complainant.

Of Counsel for Complainant.

STATE OF NEW JERSEY,)
) ss.
COUNTY OF ESSEX.)

FRAANK L. DYER, being duly sworn,
deposes and says that he is the President of THOMAS A.
EDISON, INCORPORATED, the complainant named in the fore-
going Bill of Complaint; that he has read the foregoing
Bill of Complaint and knows the contents thereof to be
true except as to those matters therein stated to be
alleged on information and belief, and as to those matters
he believes it to be true; that the reason why this veri-
fication is not made by the complainant, Thomas A. Edison,
Incorporated, personally, is because said complainant is
a corporation.

Frank L. Dyer

Sworn to and subscribed before me
this *14th* day of June, 1911.

Real

ANNA R. HLEMM
NOTARY PUBLIC STATE OF NEW JERSEY
COMMISSION EXPIRES JUNE, 1912

Walter H. Miller, witness produced on behalf of complainant, being first duly sworn, deposes as follows in answer to interrogatories by Mr. Dyke.

Q 1 Please state your name, age, residence and occupation.

A Orange, N. J.
Walter H. Miller, 41 years old, manager of the recording department of Thomas A. Edison, Inc.

Q 2 For how long have you been connected with the phonograph industry.

A For the last 24 years.

Q 3 Please give a brief statement of the various ways in which you have been identified in the phonograph industry during this period.

A I started with Mr. Edison at his laboratory in 1887 and after an experience of a year and a half in the machine shop was transferred by Mr. Edison to his phonograph department and have been connected with that department since.

Q 4 I call your attention to a machine on the table before you and bearing the number 21,289. Please state what this machine is if you can.

A This machine ~~is like~~ is like the machines built by the Edison Phonograph Works

United Phonograph
for the Edison-~~Smith~~ Company of London, England.

Q 5 By what name were the phonographs built by the Edison Phonograph Works for the Edison United Phonograph Company known,

A They were known as the Model C Phonograph. They were equipped to make 200 thread records, that is records having 200 threads to the inch.

Q 6 About what time were the machines built for the Edison United Phonograph Company.

A Between 1892 and 1895.

Q 7 Were you familiar with those machines at the time when they were being put out?

A I was.

Q 8 How does the machine before you compare with the machines made by the Edison Phonograph Works for the Edison United Phonograph Company?

A It looks identical to me with those turned out at that time.

Q 9 I should like to have you examine the sound box on this machine which bears the number 21,708 and state how that sound box compares with the Model C machine sound box as put out in 1892 to 1895.

A It seems to be the same kind of sound box.

Q 10 Please state briefly the leading characteristic features of the style C machine of 1892 to 1895.

A Machine was equipped with electric motor and so geared that its feed was 200 threads to the inch. The mandrel was so arranged that you could record on a blank of the same diameter as is used at the present time. The drum of the mandrel was removable and so arranged that when this drum was removed the ^{remaining} shaft could be used to mount a small mullin tube of about three quarters of an inch in diameter. It was equipped with a shaving device which could turn both the large and the small blanks and ^{ing stylus} records ~~xxxxxxx~~ 20 to 22 thousandths of an inch in diameter, and a reproducing ball about the same diameter on the same lever. The recording arm was so arranged on the back rod sleeve so that it could be lowered or raised in order to record ^{and records} or reproduce blanks of both diameters. In order to bring the ^{ing stylus} recorder into play there is a lever attached to the holder of the recorder which swings the said recorder in such position that the diaphragm will record and reproduce according to the way the lever is act.

Q 11 What was the effect of rotating the sound box, by which I mean the same part that you have designated the recorder, axially to its two positions?

A When the lever of the sound box is turned to the left the recording stylus is in play and ready for recording and the reproducing stylus is out of play. When the lever of the sound box is turned to the right the reproducing stylus is in play and the recording stylus out of play.

Q 12 Did you yourself ever make any use of these style C machines during the period from 1892 to 1895 when they were being put out?

A I made a number of musical records for the Edison Phonograph Company using this model C phonograph.

Q 13 About how many such musical records did you make as near as you can remember?

A I would say between 75 and 100.

Q 14 Where were those records sent?

A To the Edison United Phonograph Company, London, England.

Q 15 With what diameter of recording stylus were those records made as nearly as you can remember?

A From 20 to 22 thousandths in diameter.

By Mr. Oberlin

Counsel for complainant is requested to state on the record whether he intends to produce specimens or a specimen of the records concerning which he is examining the witness, for if such specimen or specimens are not produced objection will be made to the line of questioning above.

Q 16 Have you in your possession, or can you obtain from any source that you are familiar with, any of the musical records which you made on the style C machine at that time? and to which you have referred?

A I have none of these records but possibly Mr. Moriarity of the Edison United Phonograph Company at the time, could produce them.

Q 17 Where is Mr. Moriarity?

A I do not know.

Q 18 What were the records made of?

A These records were recorded on wax.

Q 19 When did you last hear of Mr. Moriarity's whereabouts?

A He was connected with the New York Representatives of the Edison ~~Wax~~ ^{United} Company and I think they had an office with Seligman & Company the Bankers at some address in New York City. This must have been at least six or eight years ago.

Q 20 Has the Edison ~~Wax~~ ^{United} Company an office with Seligman & Company now?

A Not that I know of.

Q 21 Do you know of any office of the Edison ~~Wax~~ ^{United} Company in New York at this time?

A I do not.

Q 22 Do you know of their having any office in the United States at this time?

A I do not know of any and I am under the impression that the Edison United Company went into the hands of a Receiver.

Q 23 Do you know where you could find out where Mr. Moriarity is at the present time?

A I presume he could be located. I do not know of any place ~~xxxxxxxxxxxx~~ unless it might be Seligman & Company.

By Mr. Dyke:

Counsel for complainant states that inquiries will be made to learn of Mr. Moriarity's whereabouts if possible, but that in view of the fact that the records referred to were wax records and that they witness has testified that they were shipped to England as long ago as 1895, the possibility of obtaining of the said records is so slight as to be substantially negligible.

Q 24 What was the character of the, records which you ^{musical} made at the time referred to with respect to the ^{kind} ~~xxxxxxxx~~ of reproduction which could be obtained therefrom?

A The records made by this Model C machine and which I made were records suitable for tube reproduction and were not as loud as and did not have the volume of those on the market today.

Q 25 What do you mean by "tube reproduction"?

A Records which were suitable for listening through hearing tubes and were not suitable for horn reproduction

Q 26 Did you ever make any records after that time on the model C phonograph?

A Not that I can remember.

Q 27 When was the present Edison Amberol record placed on the market, as nearly as you can remember?

A Somewhere in about 1908.

Q 28 In the interval from 1895 to the time when the Edison Amberol records were put on the market in 1908, were there any 200 thread records on the market?~~XXXXXX~~

~~XXXXXX~~

A I never heard of any.

Q 29 If there had been would you have heard of it?

A I would.

Q 30 During the period named, 1895 to 1908, were you familiar with the phonograph records which were on the market in the United States and also in foreign countries?

A I was.

Q 31 What was the number of threads per inch on phonograph records which were on the market during said period from 1895 to 1908?

A 100 threads to the inch.

Q 32 Did you have any connection with the development of the Edison Amberol record?

A I did.

Q 33 Please state what such connection was.

A Mr. Edison was rather anxious at that time to develop a record which would be of longer duration than the one then on the market, and he instructed me to begin experiments in order to make a 200 thread record. He furnished me feed screws and diaphragms and after experimenting for several weeks it was found impossible to produce a musical record which was equal to that on the market. More sensitive diaphragms were tried, different recording horns and harder waxes, but the results were quite unsatisfactory and not equal to the volume obtained by our 100 thread records. About that time Mr. Edison arranged a microscope in such a way that a phonograph record could be easily inspected by it, and on examining it very carefully we found that ^{in the case of} the records we made that nearest approached our 100 thread record, the groove made by the stylus would cut out part of the adjacent groove and at ~~times~~ on the greater part of the record showed that the recording needle jumped out of the wax. Mr. Edison then had a sketch made by his draftsman very greatly enlarged, which showed the relative amplitudes which a 20 thousandth needle ^{for making these experiments} which was used at that time, and the 40 thousandths diameter needle which was used for the 100 thread records which were then on the market.

This sketch disclosed the fact that it was impossible to get the amplitude with the 20 thousandth needle and 200 thread feed that could be obtained with a 40 thousandth needle and 100 thread feed. I was then instructed to continue my experiments with a 10 thousandth diameter needle, ^{with} which afterward we had no trouble in getting the necessary result.

Q 34 For how long a time did you continue your experiment using the 20 thousandths recording stylus or needle before you were directed to substitute one having 10 thousandths diameter?

A I should say from six to eight weeks.

Q 35 About what time was it that these experiments were conducted?

A As near as I can remember, the latter part of 1904.

Q 36 For how long a time prior to that had you been engaged in the art of recording sound records?

A I had been recording sound records more or less at different times, since 1890.

Q 37 When you started in these experiments with Mr. Edison, what was your individual expectation of being able to produce a successful 200 thread record?

A I had no faith in it whatever.

Q 38 What position did you occupy in 1904?

A Manager of the recording department of the National Phonograph Company.

Q 39 How long had you occupied that position at that time?

A I took charge of the making of master records of this Company about 1900.

By Mr. Oberlin:

It is noted on the record that the witness referred to a memorandum book in fixing the date in response to the preceding question.

Q 40 From 1900 to 1904 who had charge of the recording of master records for the National Phonograph Company?

A I did.

Q 41 Prior to 1900 what had you done in the recording of phonograph records?

A * In 1893 I had charge of the recording for the North American Phonograph Company until that Company went into the hands of a Receiver, and ~~the~~ ^{the} ~~the~~ recording department of this company was bought out by Mr. Walcutt and myself and others. I will have to refer to my memorandum book. I stayed with the firm of Walcutt Miller & Company until the ~~first~~ ^{first} part of 1896 ~~as the~~ as the chief recorder for the Company. After that time at the advice of Mr. Edison, I became connected with the

new company organized called the Phonograph Record Supply Company with which Company I acted as recorder and manager. I left this Company March 1897 and was engaged by Mr. Edison for the National Phonograph Company, May 1897, having charge of a duplicating plant, the masters for which were furnished to us by a Company called the United States Phonograph Company, now out of existence. We used their masters for a while and then started our own master recording plant which was about 1899 or 1900. From that time I have had a position as manager of the recording plant of the Edison Company.

Q 42 What was the first Company to exploit the making of phonographs and phonograph records and supplies?

A The North American Phonograph Company.

Q 43 Did you know of any efforts of Mr. Edison to produce a record having a much finer groove than the standard 100 to the inch record, prior to his successful production of the Edison Amberol record?

A I have heard several records that he had made having to the inch prior to the experiments 200 threads, ~~xxxx~~ which I referred to before.

Q 44 What character of reproduction was obtained from such record?

A All these records that I have heard were always listened to through hearing tubes. Reproduction of same

through a horn was unsatisfactory and not sufficient volume
Benzler

Q 45 Do you know Albert ~~xxxx~~ and Frank Hofbauer?

A Yes.

Q 46 How did you know them?

Benzler

A Mr. ~~xxxx~~ and Mr. Hofbauer were employed by me in the recording department of Thomas A. Edison, Incorporated.

Q 47 What was the nature of their employment?

Benzler

A Mr. ~~xxxx~~ was employed as pianist for the Company and Mr. Hofbauer as mechanic assisting me in my experimental work.

Benzler

Q 48 Was Mr. ~~xxxx~~ in a position to learn the methods practiced and the apparatus for use in the recording department while he was there?

Benzler

A Mr. ~~xxxx~~ was in a position to observe how the various singers were recorded, but I do not think he had any knowledge of the mechanical end of the business.

Q 49 What were the nature of Mr. Hofbauer's duties in the recording department?

A Mr. Hofbauer did all the repair work that was necessary in the mechanical line and also assisted in all experimental work.

Q 50 What were his opportunities for knowing the processes practiced and the apparatus used in the recording department of Thomas A. Edison, Incorporated?

A He had every opportunity to know ^{the} mechanical construction of all apparatus which was used.

Q 51 And what did his knowledge appear to be of such matters as it was disclosed to you in the course of his work?

A He seemed to be bright and thoroughly familiar with the methods of recording used in this department.

Q 52 Are ~~Kaxler~~ ^{Benzler} and Hofbauer in the recording department of Thomas A. Edison Incorporated, now?

A They are not.

Q 53 How long have they been out of that department?

A Since July 1909.

Q 54 Under what circumstances was their employment in the recording department of Thomas A. Edison, Incorporated terminated?

A I had heard that a Mr. Hibbard who had formerly been connected with the Edison interests, and who was then working for the U. S. Phonograph Company, had made overtures to Mr. Bealer and Mr. Hofbauer to engage them for similar positions for his Company. I then called in my office Mr. Bealer and Mr. Hofbauer and advised them ~~that~~ of what I had heard and told them they would have to make up their minds within a few days, as to just what they were going to do. They advised me that they had

been approached by Mr. Hibbard and had been offered better salary than what was being paid to them by the Edison interests, and would stay and retain their same positions, providing their salaries were increased. This the Edison Company refused to do, and they were engaged by the U.S. Phonograph Company.

Adjourned to 10:30 o'clock A.M. January 24, 1912
at same place.

Met pursuant to adjournment. Parties present as before.

Q 55 In your testimony you have used the expression "master record". What do you mean by a "master record?"

A A master record is an original record from which duplicates are made by various processes.

Q 56 Referring to your answer to Q 41 in which you stated that you had charge of the duplicating plant of the National Phonograph Company in 1897; how did you make duplicate records at that time?

A By mechanical duplicating, that is to say, a master record was duplicated by tracing; the original record with the reproducer ball attached to a lever, the other end of which had a recording stylus attached thereto, and so manipulated that it would record the elevations and indentations of the master record on another blank. The result was called the duplicate record.

Q 57 What was the character of the material used in making duplicate records in this manner?

A The ~~w~~ duplicate records were made of material ^{of} about the same hardness and cutting qualities as the master record. As these duplicates were made by engraving the wax-like material which was used had to be sufficiently soft to permit of engraving the duplicate record thereon.

The phonograph which has been shown to the witness and concerning which the witness has testified, is introduced in evidence with the designation: Complainant's Exhibit No. 25 Edison Style C Phonograph No. 21,289. The sound box on said phonograph is introduced in evidence with the designation: Complainant's Exhibit No. 26 Edison Style C Sound Box No. 21,708.

Direct examination closed.

Cross Examination by Mr. Oberlin.

XQ 58 Do you remember ever seeing before yesterday afternoon, the particular Edison Style C Phonograph which has just been introduced in evidence as Complainant's Exhibit No. 25?

A I do.

XQ 59 When?

A Last Saturday.

XQ 60 Is that the only time that you remember seeing said machine?

A I have seen a number of these machines at different times, but cannot say that this particular one was among them.

XQ 61 But you are certain that ^{you have seen} machines of the same, ^A or substantially the same construction with sound boxes such as the one at present mounted on this machine, which has been separately designated Complainant's Exhibit No. 26, prior to 1895, is this correct?

A I have.

XQ 62 You have stated on direct examination that these Model C or Style C phonographs were built by the Edison Phonograph Works for the Edison United Phonograph Company between 1892 and 1895. Were you connected with said Edison Phonograph Works during that time?

A During the period some time in the latter part of 1898 I was transferred by Mr. Edison to the North American Phonograph Company, and was working under his instructions more than any of the officers of the company, and I stayed with that company until they went into the hands of a Receiver, September 1894. During the balance of that year to May 1897 I was connected with the firm of Walcutt Miller & Company and the Phonograph Record Supply Company, but during this time I was always on the Edison pay roll doing special work for Mr. Edison, making weekly visits and sometimes oftener, to the Edison factory.

XQ 63 When you state in your preceding answer that you were "on the Edison pay roll", just what do you mean?

A I received my pay envelope weekly at the office of the Edison Phonograph Works.

XQ 64 What was this "Edison Phonograph Works" to which you have been referring?

A The Edison Phonograph Works was a Company which manufactured Phonographs, records and supplies under the direction of Mr. Edison for the North American Phonograph Company for use in the United States and Canada, and also independently ~~xxxxx~~ of the North American Phonograph for export.

XQ 65 I understand said Edison Phonograph Works is no longer in existence. Is this correct?

A As far as I know, it is.

XQ 66 So far as you know were any of these Model C machines manufactured in the United States by any other person or firm than said Edison Phonograph Works?

A I do not know of any other machines other than these that were manufactured.

XQ 67 Where did the Edison Phonograph Works have its factory at the time of which we are speaking, namely from 1898 to 1899?

A West Orange, New Jersey.

XQ 68 Was it at this factory that you have heretofore testified you made a number of musical records using this Model C phonograph?

A The records I made with these machines were recorded at the recording laboratory of the North American Phonograph Company, Fourteenth Street, New York City.

XQ 69 What was the business of this North American Phonograph Company?

A To sell phonographs and supplies manufactured by Edison Phonograph Works.

XQ 70 What was the "Edison United Phonograph Company, London, England" to which you have testified in answer to Q 14 the records which you thus made, were sent?

A A company organized to sell Edison phonographs and supplies in some of the foreign countries.

XQ 71 Did this Edison United Phonograph Company have offices in the United States, and if so, where were such offices located?

A I do not know that they had any office to exploit their goods, but as I recollect they had some headquarters of some kind at the offices of Seligman & Company, Bankers New York City.

XQ 72 Is this the name Seligman & Company to which you have referred on direct examination?

A It is.

XQ 73 Are Seligman & Company still in business in New York?

A I don't know.

XQ 74 In what way were you "familiar" as stated by you in answer to Q 7, with the Model C phonograph built for

the Edison United Phonograph Company between 1892 and 1895?

A My experience with the Model C machines was that I operated them in recording records with them.

XQ 75 You have stated in answer to Q 10 that one of the characteristic features of this machine was that it had a recorder of a diameter of 20 to 22 thousandths of an inch. How do you know this to have been the fact.

A I had been told so by Mr. Edison and by my experience in looking at needles of these small diameters I could note that it was much smaller than recording needles which I had been in the habit of using which were 40 thousandths in diameter.

XQ 76 Did you ever actually measure the recording needle or stylus on one of these Model C phonographs?

A Not that I can remember.

XQ 77 I take it, then, you have not measured such needle or stylus in the case of the exhibit phonograph and sound box before us?

A I have not.

XQ 78 Were the records which you have testified you made during the period from 1892 to 1895 using such Model C phonograph, all original records, that is records recorded directly by means of the recording needle or stylus of the machine?

A They were original records.

XQ 79 For what use were such records intended?

A I presume for entertaining purposes.

XQ 80 Was this Model C machine, upon which I understand the records thus made were likewise intended to be reproduced, used primarily for entertaining purposes?

A My impression is that the machine was constructed for musical records and for correspondence by mail ~~etc~~ using the mailing tube record of small diameter.

XQ 81, This mailing tube record is the same as the "small mailing tube of about three quarters of an inch in diameter" to which you referred in your answer to Q 10, is it not?

A It is.

XQ 82 About how many machines, if you know, of this Model C type were manufactured altogether by the Edison Phonograph Works?

A I do not know.

XQ 83 About how many records, if you know, were made by said Edison Phonograph Works, for use on machines of this type?

A As far as I know the Edison Phonograph Works did not make any records for this machine.

XQ 84 Well, were the 75 or 100 records which you have heretofore stated you yourself made, for use on this Model C phonograph, the only ones made in this country for such use?

A As far as I know, they were.

XQ 85 And were these all shipped abroad or did your employers retain ^{some} such records?

A These records were all ~~shipped~~ delivered to representatives of the Edison United Company and I was told they were to be shipped ~~abroad~~.

XQ 86 Did you ever make any 200 thread records except on this Model C type of machine as you have hereinbefore testified, prior to your experiments on the so called Amberol record?

A I have not.

XQ 87 Did you ever make any record prior to the experiment just referred to, with a record groove of a pitch materially finer than 100 threads per inch?

A I have not.

XQ 88 What two principal kinds of records, having regard to their shape, are at present on the market in this country?

A A round and a flat record.

XQ 89 How else might you describe the "round" record to which you have just referred?

A They are also called the cylinder records.

XQ 90 How else might you describe the "flut" records to which you have just referred?

A They might also be called disc records.

XQ 91 What kind of records, Mr. Miller, cylinder or disc have you had in mind in your testimony heretofore given in this cause both on direct and cross examination?

A The cylinder record.

XQ 92 Have you any familiarity with the manufacture of the so called disc records?

A To a moderate extent.
statements

XQ 93 But the ~~statements~~ which you have heretofore made with reference to the thread-finess on records with which you have had experience has taken into consideration only cylinder records, has it not?

A They have.

XQ 94 Have the disc records with which you have just stated you have had some experience, had grooves of the laterally undulatory or of the vertically undulatory type?

A Both.

Recess for luncheon.

XQ 95 In your answer to Q 29 you stated that if there were any 200 thread records on the market in the interval from 1895 to the time when the Edison Amberol records were

put on the market in ~~1888~~ 1908 you would have heard of it.
What reason have you for this assumption?

A The Company by which I was employed always made it a point to purchase anything new in the way of records and phonographs, and I being particularly interested in this particular line, I had an opportunity to keep posted in this manner.

XQ 96 Did you attend the World's Columbian Exposition which was held, I believe, during the year 1893 at Chicago, Illinois?

A I did not.

XQ 97 ~~XXXXXXXXXX~~ In your answer to Q 33 you have stated that Mr. Edison was rather anxious "at that time" to develop a record which would be of longer duration than the one then on the market; to what time were you referring?

A It was some time during the interval of 1903 or 1904.

XQ 98 In this same answer you have referred to some records of the 200 thread type then made by you "that nearest approached our 100 thread records". In what way did you mean that said 200 thread records approached the 100 thread records?

A I mean by this that the best results which were obtained by various experiments during that period.

XQ 103 What, if you know, causes this "rattle" to which you have just referred?

A This is due to the recording stylus jumping out of the wax and at times cutting into the preceding groove.

XQ 104 Are you familiar with the term "echo" as employed in recording; laboratory practice?

A I am.

XQ 105 Is this "rattle" to which you have referred the same as the so called echo?

A It is not.

XQ 106 What do you understand to be an "echo" in the case of a phonograph record?

A It is caused by the recording stylus when in vibration cutting into the adjoining grooves, and when it is reproduced, the reproducer at times not only reproduces the sound that ~~it~~ is recorded in the groove but also parts of the indentations from adjoining grooves.

XQ 107 A rattle, then, differs from an echo only in that it is an unmusical result flowing from this same cause or condition, namely an overlapping in part of adjacent record grooves. Is this correct?

A A rattling sound as I said before, is not due to overlapping, but is caused by the ~~XXXXXX~~ needle jumping out of the wax and this occurred principally when the recording stylus was not cutting deeply.

XQ 108 In your answer to Q 33 you have referred to a sketch made by Mr. Edison's draftsman, showing certain relative amplitudes of recording needles. Did you see this sketch yourself at the time?

A I did.

XQ 109 Have you seen it since?

A I have not.

XQ 110 Do you know whether it is still in existence?

A I do not.

By Mr. Oberlin:

Counsel for complainant is requested to have a search made in an effort to locate the sketch in question and produce it for inspection and examination of the witness thereon, in view of the testimony regarding the same vouchsafed by this witness, and in view of its obvious interest.

XQ 111 Were there any other sketches, diagrams or like devices employed by you or by Mr. Edison, to your knowledge, during the course of the experiments under discussion?

A Not that I know of.

XQ 112 How would you show the amplitude of a recording needle such as you have stated was shown on this sketch?

A By drawing a circle on an enlarged scale with one half inch to the thousandth to represent ^{the} a circular cut made by the recorder needle, then drawing two parallel ^{vertical} lines at equal distance from the center of this circle

the distance between these two parallel lines to represent the pitch of the feed screw. Then draw a horizontal line connecting these two vertical parallel lines at such a place as will touch the bottom of circle already mentioned. Then draw another horizontal line parallel to the horizontal line already made at such a place that will intersect the parallel lines and the circle drawn to represent the recording needle. The amplitude of this needle will then be represented on the drawing as the distance between ^{the} two horizontal lines.

QX 113 What does the distance just referred to by you as defining the amplitude of a recording needle, represent in the case of a record groove cut by such needle?

A In a case of a record groove cut by a needle the amplitude is the ~~sixteenth~~ depth of the groove, but when referred to sound vibrations recorded in said groove, the amplitude is the distance a recorder needle travels up and down in the wax.

QX 114 What do you understand should be the relation between the amplitude of a recording needle as defined by you in your answer to QX 112 and the amplitude or depth of the groove cut thereby?

A The amplitude of the needle ~~xxxx~~ defined in my answer to QX 112 is the limit of the depth this needle can cut without cutting into the adjoining groove.

the diaphragm of a recorder have anything to do with the depth to which the cutting needle or stylus of such recorder will cut, assuming adjustment to have otherwise been made in one or the other of the several fashions which you have just described?

A The character of sound which affects the vibration of the recording stylus does not affect the general depth of the groove, but on certain heavy vibrations it will make a cut much deeper than ~~the~~ when no sound occurred. ~~XXXX~~

XQ 118 Do I understand from your answer to XQ 116 that in practically making phonograph records the recorder means: thereby the sound box, with its various appurtenant parts including the cutting or recording stylus, is adjusted so that said stylus will cut a groove of a predetermined depth without any vibration of the diaphragm of said recorder whatever?

A Yes, in recording the groove cut of a recording stylus is determined before the sound vibrations are made.

XQ 119 When sound waves then impinge upon such diaphragm, the depth to which the stylus cuts will be greater or less than this normal depth which said stylus is thus not arbitrarily to cut, depending upon the character of these sound waves. Is this correct?

A That is correct.

XQ 120 What is the approved normal depth to which the recording stylus under present practice is set to cut?

A We usually make the walls ^{of} ~~in~~ the cut one-fifth of the width of the cut.

XQ 121 What do you mean by "walls" in the preceding answer?

A The space between the grooves, that is the width of the space between the grooves.

XQ 122 The foregoing still does not make clear what is the approved normal depth to which the recording stylus under present practice is set to cut.

A The depth of the cut in normal practice is about seven eighths of a thousandth, as near as I can remember.

XQ 123 How long has it been the "normal practice" to make the normal depth of groove that just stated by you?

A As long as my experience has been in recording.

XQ 124 And such experience goes back to approximately what date?

A 1889.

XQ 125 And how long has it been the practice to make the "walls" of the cut one-fifth of the width of the cut when the recording stylus is cutting to this normal depth?

A As near as I can remember as far back as 1900.

XQ 126 Why, if you know, was it adopted as approved practice to make the "walls" of the cut one-fifth of the width of the cut when the recording stylus is cutting to this normal depth?

A Because we seemed to get the best results from this practice.

XQ 127 Then I take it that in commercial practice prior to the date last named by you, various other relations between the "walls" and the width of cut were used. Is this correct?

A It ^{was} always the practice to cut before this date, as deep as would produce the best result, and as the machines at that time were not equipped with a microscope I cannot definitely say just what ^{the} relation was prior to that date.

XQ 128 What, if you know, led to the adoption as long ago as 1889 of seven-eighths of a thousandth inch as the normal depth of cut for the recording stylus?

A The pitch of the feed screw regulates this depth to a large extent, and in conjunction with the diameter of the recording stylus.

XQ 129 What has the pitch of the feed screw to do with the normal depth of cut adopted?

A If you are using a forty thousandths recording needle

and a feed screw 100 threads to the inch you cannot cut much deeper than a thousandth of an inch without cutting the adjacent groove.

XQ 130 Has the relation of the pitch of the feed screw and the diameter of the recording stylus in jointly regulating the depth of cut adopted as "normal" been always understood by you and other experts in this art during the term covered by your experience which goes back as stated by you in your answer to XQ 124, to 1889?

A I do not know what other experts in the art have decided in this matter. The best records in the cylinder line with 100 thread pitch and with a cylinder two and three-sixteenths ^{inches} in diameter have been produced in this manner.

XQ 131 Can you reproduce from memory the sketch which you stated in answer to Q 33 Mr. Edison had his draftsman make showing certain relative amplitudes of recording needles?

A I think I can duplicate the sketch very readily.

By Mr. Oberlin:

The witness is requested to make such a reproduction of the sketch in question following adjournment and to bring the same to our session when we meet again tomorrow morning.

XQ 132 Referring to the exhibit phonograph and sound box before us, complainant's exhibits Nos. 25 and 26,

do I understand that such machine is adapted for recording on record blanks of the same size as are commonly used in your recording laboratory?

A The same blanks used in our recording laboratory can be used on this machine.

XQ 133 And does such machine appear to be in running order so that if fitted with a proper blank, a record could be made thereon?

A It appears to be in running order.

XQ 134 In answer to Q 37 on direct examination, you stated that when you started in these experiments with Mr. Edison you had no faith whatever in being able to produce a successful 200 thread record. What were your reasons for this lack of faith?

A At that time 100 threads to the inch was a very fine proposition and to make it twice as ^{fine} ~~xxxxxx~~ I thought was asking too much both from the recording and the reproducing standpoint, and also having in mind the poor success which was made of the Model C machine by the Edison United Phonograph.

XQ 135 Have you any personal knowledge regarding ~~the~~ ^{the} success or lack of success which the Edison United Phonograph Company had with such Model C Machines?

A Nothing more than I know that the manufacture of same had been discontinued by the Edison Phonograph Works.

XQ 136 And when was it that such manufacture was discontinued by the Edison Phonograph Works?

A I do not know the date. It must have been somewhere in 1896 or around that time.

XQ 137 How long after 1896 did the Edison Phonograph Works continue actively in the manufacture of phonographs of any kind?

A Up to this date if the Edison Phonograph Works still exist and have not been combined with the Thomas A. Edison Incorporated.

XQ 138 Do you know what became of the machines of the type in question which were shipped to the Edison United Phonograph Company of London, England, as previously testified by you?

A I do not know.

XQ 139 ^{Was} ~~is~~ there anything peculiarly, evanescent about the wax records which you have stated you made to the number of 75 or 100 on this Model C machine for shipment to the Edison United Phonograph Company. In other words did these records differ in permanency or lasting qualities from other records which were manufactured by the Edison Phonograph Works at the same date?

A The records which I made at that time were recorded on practically the same material now in use and were no more fragile or susceptible to deterioration than I know of.

XQ 140 During your direct examination you had occasion to speak of "tube reproduction" and "horn reproduction". In 1892 or thereabouts, what was the usual mode of reproduction for records then currently in use in this country?

A I should say that both the machines were equipped for tube reproduction, and they were slowly discarded by user and new purchasers of machines and about 1896 there were few, if any, ^{ear}tubes in use, users preferring the horn reproduction.

XQ 141 What, if you know, led to the increasing use of the horn for reproduction purposes instead of the ear tubes?

A Recording of records began to improve gradually so that more volume could be obtained from them, so that they could be heard satisfactorily with the horn.

XQ 142 Were there not also improvements made about this time in the horns themselves, better adapting them for use in reproducing records?

A Not to any great extent.

XQ 143 Have ear tubes continued in use down to the present day?

A They are seldom used if used at all, by owners of machines. There are exceptions to this where machines are used in slot parlors. ~~XXXXXXXXXXXX~~

XQ 144 Are not ear tubes also employed at the present day on so called commercial or business phonographs used for correspondence or rather for dictation purposes?

A They are. I principally referred to amusement purposes.

XQ 145 And I understand that one of the uses for which this Model C machine was designed was for dictating correspondence. Is this correct?

Edison
A All machines manufactured by the Phonograph Works ~~during the experiment~~ were manufactured for dictating purposes as well as for amusement.

XQ 146 You have stated in your answer to Q 24 "that the records made by this Model C machine and which I made were records for tube reproduction and were not as loud and did not have the volume of those on the market today". Was this not also true of most records, whether made on this machine and of 200 threads per inch or made on other machines and having 100 threads per inch, at the time in question, namely, in 1898 or thereabouts?

A They were weaker records and did not have the volume of the records I was making at that time for the North American Phonograph Company on their machines which had a feed of 100 threads per inch and ~~18-1/2~~ ^a stylus .045" in diameter. A.M.
Adjourned to 10:15, January 26, 1912.

Met pursuant to adjournment.

Present: Mr. H. H. Dyke
For Complainant
Mr. John F. Oberlin,
For Defendant.

XQ 147 During the course of your cross examination yesterday afternoon I asked you to make a reproduction of the sketch you stated in answer to Q 33 Mr. Edison had his draftsman make showing certain relative amplitudes of ~~the~~ recording needles. Have you made such reproduction and if so will you produce the same?

A I have and herewith produce it.

XQ 148 Do I understand that the brown sheet drawing which you have just produced, is a substantial reproduction in every particular of the original sketch made by Mr. Edison's draftsman? If not, indicate any differences between said reproduction and the original sketch.

A This is a reproduction of this drawing made on the same kind of drawing paper and is duplicated the same as I saw the drawing at that time with the exception that it had no markings on it to describe one circle from the other as is herewith shown. The scale may have also been somewhat larger than the one shown on this drawing.

XQ 149 I take it then, that the notation appearing at the lower right hand corner of this reproduced sketch and reading "Scale one inch to the 1/1000 of an inch"

has been placed on this sketch by you merely to indicate the scale of the present drawing and that no such notation appeared on the original sheet.

A No such notation appeared on the original sheet.

XQ 150 Furthermore I take it, that while the designation applied on the present sketch to the several curves and the indications of distances between certain of the lines were not found on the original sketch you did by word of mouth or otherwise have explained to you what these curves and distances were intended to represent. Is this correct?

A I was present when the original drawing was made when Mr. Edison gave instructions to his draftsman to make these curves and I understood at the time what they represented.

~~XXXXXX~~

By Mr. Oberlin:

The drawing or sketch which has been produced by the witness is offered in evidence as an exhibit by defendant, and the Notary is requested to mark the same:

Defendant's Exhibit No. 1, Miller's
Reproduction of original Edison sketch.

XQ 151 You say you were present at the making of the original drawing or sketch, Mr. Miller?

A I was.

XQ 152 Who was the draftsman who made such a sketch.

A I believe his name was Mr. Herter, I am not sure how

the name was spelled.

XQ 153 Do you know where this Mr. Herter now is?

A I do not.

XQ 154 Was anybody present at the making of this sketch besides yourself and Mr. Edison?

A Mr. Herter was the only other person present besides Mr. Edison and myself.

XQ 155 Did you do all of the experimenting for Mr. Edison in connection with the development of the Amberol record so called, concerning which you have testified in answer to Q 33?

A As far as I know I did.

XQ 156 Did you have any assistants in this work?

A No, most of the preliminary experiments I tried myself personally. Of course I had "talent" to assist me and possibly I might have had one of my assistants to operate my machine for me at ~~xxxx~~ times during my experiments.

XQ 157 Were these experiments conducted on one of your regular recording machines, or did you make a special machine for the purpose?

A There was an alteration made in our regular recording machines to make the feed 200 threads to the inch.

XQ 158 What was the nature of this alteration?

A A feed screw 100 threads to the inch was attached to our regular phonograph body by means of a casting in line with the main shaft of the phonograph. This extra feed screw was caused to revolve by means of a sprocket chain connected with the main drive and geared in the relation of two to one, so that when the mandrel made one revolution, this attached feed screw would make but one half revolution. The recorder was caused to feed along from this screw by means of a feed nut engaged with this screw and attached to the carriage which moved with the records.

XQ 159 After making this alteration in your regular recording machine so as to change the rate of feed in the manner you have just described, what was the next step in your experiments?

A The next step was to try to make some 200 thread records for use on this machine and the recorder equipped with a needle 20 thousandths of an inch in diameter.

XQ 160 This I assume was the same recorder as you regularly used in recording for 100 thread records. Is this correct?

A It was with the exception of the ^{stylus} arm which held ~~it~~ the stylus somewhat smaller.

XQ 161 About how many records, if you remember, did you make with the machine arranged as before described and using this recorder with the recording stylus of a diameter

20 thousandths of an inch.

A I do not remember that I made any complete records for the reason that the results did not justify it.

XQ 162 Please state for us in some detail just what you did in the way of experiment with the apparatus you have just described as having been first tried out by you.

A The first step in preparing to make phonograph records was to test out your recorder, which is done by allowing the recording stylus to cut in talking and singing with the machine, and making detailed adjustments of the recorder until the best and most satisfactory results are obtained from the recorder. In my experiments with this apparatus above described I found that I could not adjust this apparatus so that I could obtain the results as regards to volume compared with the record we were then making on our 100 feed machines.

XQ 163 Did Mr. Edison personally follow you with the making of these experiments with the apparatus under consideration?

A He did.

XQ 164 How long a period of time was occupied in your experiments upon this form of apparatus?

A The experiments were continued as near as I can remember from six to eight weeks before it was found out what the trouble was.

XQ 165 During the time that these experiments were going on were you giving your entire attention thereto or did you have other duties that at least partly occupied you?

A Most of my time was used with these experiments but not all, as I was at that time manager of the recording plant and had to supervise it.

XQ 166 State as nearly as you can, the date when these experiments were first begun.

A I would say, as near as I can remember, the latter part of 1903 and the beginning of 1904.

XQ 167a Have you no records, or had your Company; the complainant herein, no records which would show exactly when said experiments were begun as well as how long they continued?

A I know of no such records.

XQ 168 Is it your custom to make no record of experimental work of this kind?

A I At that time I did not make any notes of my experiments.

XQ 169 Do you know whether or not Mr. Edison kept any record of these experiments?

A I do not know.

XQ 170 From your association with Mr. Edison do you know whether or not it was his custom to keep a record of ex-

of the experiences I have had with experiments, but I think eight weeks is the maximum in this case.

XQ 176 Might not the time actually consumed have been less than six weeks?

A As near as I can remember we were at least six weeks experimenting with this particular apparatus.

XQ 177 What kind of selections, that is, what kind of sounds did you try to record when you began these experiments?

A Talking and singing with piano accompaniment.

XQ 178 Did you try out any selections that were exclusively instrumental?

A I did not.

XQ 179 Who, if you remember, did the talking for these experimental records?

A I did the talking but I do not remember who did the singing.

XQ 180 Who played the piano accompaniment for the singing,

A I do not remember.

XQ 181 Who was your regular accompanist at the recording laboratory at the time the experiments were usually conducted?

A I am not sure at this time that we had a ~~xxxxxxx~~

permanent accompanist at the recording laboratory at that time. We had several piano players employed at that time.

XQ 182 Would the records of your laboratory, or of the Edison Company, show who was employed in this capacity at the time in question?

A I think they would.

By Mr. Oberlin:

Counsel for complainant is requested to have a suitable search made either by the witness or some other proper party for the records bearing on this matter and to produce the same for the consideration of counsel for defendant before the examination of the present witness is closed.

XQ 183 Please state where these experiments, concerning which you have been testifying, were conducted.

A At the recording laboratory of the National Phonograph Company, 69 Fourth Avenue, New York City.

XQ 184 What kind of a phonograph did you use in testing out the experimental records made by you as to their reproduction qualities?

A The same style of machine as is used to reproduce a two minute record, with the exception that the feed was changed to 200 threads per inch, and the reproducing diameter stylus to 20 thousandths of an inch, or about.

XQ 185 Well what kind of reproducing stylus did you regularly employ in this machine? for reproducing two minute

records?

A Since the two minute records have been on the market a round ball was first used 40 thousandths of an inch in diameter. Later on a ~~xxxx~~ button ball was used which had a diameter of 40 thousandths of an inch transverse of the groove and a ~~xxxx~~ curvature of smaller radius longitudinally of the record groove, the diameter of which curvature was about 15 thousandths. Just which ball was used at this time I would have to look at the records to learn, but I am of the impression that a button ball was used.

XQ 186 Of what form was the stylus of a diameter of 20 or about thousandths of an inch, which you have stated was used in testing out the experimental records under consideration? That is was said reproducing stylus of the round form or button ball form?

A The reproducing stylus was round. By round I mean spherical.

XQ 187 Who, if you know, made the cutting and reproducing styluses, both of which you have testified were approximately 20 thousandths of an inch in diameter, that were used in these experiments?

A These recording styluses and reproducer balls were made at the Factory. I do not know who made them.

XQ 188 Do you know who was in charge of the department

at the factory that made such styluses?

A I do not.

XQ 189 As a result of your experiments with these cutting and reproducing styluses of approximately 20 thousandths of an inch in diameter, did you come to any conclusions yourself as to why the records therewith made and reproduced did not give satisfactory results, as you have hereinbefore testified?

A At the time these experimental records were ~~made~~ examined under the microscope it occurred to me that something radical was the matter, and I discussed with Mr. Edison the looks of what I saw in the microscope, and he suggested that it be laid out in the drawing that I ~~xxx~~ spoke about before, but I could not understand at the time why it was not possible to get as good a record with a 20 thousandth needle ~~xx~~ ⁱⁿ 200 threads as we did with the 40 thousandth needle in the 100 thread.

XQ 190 What was the appearance or looks of the record as viewed by you in the microscope, which you have just stated you discussed with Mr. Edison?

A I believe I answered this question before in my direct testimony. The best results that I obtained in my experiments which were selected by listening to them with the reproducer, I found, by inspection in the microscope that the vibrations were extensively cutting

into the next groove and that a greater part of the record ~~showed that the recording stylus~~ showed that the recording stylus jumped out of the wax.

to
XQ 191 What was the normal depth of groove, which you set this cutting stylus of a diameter of 20 thousandths of an inch, while you were making the experiments under consideration?

A Everything was experimental. All sorts of depths were tried. The best results were those made with a deep track.

XQ 192 Then it was when the cutting stylus was set to normally cut a deep track "that the vibrations were extensively cutting into the next groove and that a greater part of the record showed that the recording stylus jumped out of the wax," was it not?

A This is true.

XQ 193 The vibrations of the recording or cutting stylus when a sound is being recorded carry the cutting edge of such stylus both above and below this normal depth of cut to which the stylus is set, do they not?

A They do.

XQ 194 What relation is there between the distance to which the vibrations of the recording stylus carry the cutting edge of the latter above the normal depth of groove to the distance which said vibrations carry the cutting

edge below such depth?

A I do not know and I do not believe anybody else knows.

XQ 195 It is not considered good practice, however, in recording, to have the vibrations of the stylus carry its cutting edge above the normal depth of cut so far as to cause the stylus to entirely leave the record blank is it?

A Records are better when the recording stylus does not jump out of the wax.

XQ 196 A part of your problem, then, in making the beforementioned experiments, was to secure an adjustment of the recorder such that the recording or cutting ~~xxxxxxxxxxxx~~ stylus would not jump out of the wax, that is, leave entirely the record blank, was it not?

A It was.

XQ 197 It was also a part of your problem, was it not, to secure such an adjustment of the recorder that the or cutting recording, stylus would not cut record grooves that in part overlapped?

A It was.

XQ 198 But you found, ~~that~~ using a cutting stylus having a diameter of approximately 20 thousandths of an inch, that where the best results were secured in the record when reproduced, the cutting stylus had jumped out of the wax, did you not?

A I found this true.

XQ 199 You also found under the circumstances stated in XQ 198 did you not, that there was more or less overlapping of adjacent grooves?

A I did.

XQ 200 After making a microscopic examination of ~~the~~ those records cut with a cutting stylus having a diameter of approximately 20 thousandths of an inch which gave the best results upon reproduction, and finding as just stated by you, that in such records the cutting stylus had jumped more or less out of the wax, and also that there was more or less overlapping of adjacent grooves, what did you next do in the course of your experiments?

A As near as I can remember, the impression that I received from this examination, indicated to me at first that the sound box was too sensitive, which I partly attributed to the smaller diameter of needle than I had been accustomed to use. I tried experimenting making different ~~kindsof~~ly constructed sound boxes, tried various recording horns and tougher waxes, but did not get satisfactory results until Mr. Edison suggested that I use a needle having 10 thousandths of an inch.

Recess for luncheon.

XQ 201 It was well understood in the art, was it not Mr. Miller that the time that the experiments under consideration ~~was~~ were undertaken in the latter part of 1903 or thereabouts, that in making phonograph records the recorder should be so adjusted that the recording or cutting stylus would not jump out of the wax .

A It was known that best results could be obtained when the recording stylus did not jump out of the wax.

XQ 202 It was also well understood at the time ~~it~~ should in question, was it not, that the recorder ~~should~~ be adjusted so that the recording or cutting stylus would not cut grooves that in part overlapped?

A It was.

XQ 203 Is the jumping of the recording or cutting stylus to which you have referred, associated with deep or shallow gouges according to your observation?

A Principally with deep gouges or indentations.

XQ 204 In other words the vibrations of the cutting or recording stylus would appear to go to an extreme limit downwardly as well as upwardly in the case of such jumping, referring to the normal depth of cut. Is this correct?

A ~~xxxxxxx~~ I do not understand the question.

XQ 205 Does the width of a record groove cut with a

and 1 respectively.

XQ 210 Do the gougues 1 and 2 to which you have just referred, appear to be of abnormal width compared with the width of the grooves appearing on the Exhibit in question?

A They appear to be wider than the normal width of groove.

XQ 211 In your answer to Q 33 you have stated that "About that time (meaning the time while you were engaged in these experiments) Mr. Edison arranged a microscope in such a way that a phonograph record could be easily inspected by it". Had you ever used a microscope in your work of making records prior to this date in order to ascertain the character of the record grooves?

A I think Mr. Edison had one of these microscopes for his personal use at his laboratory, but I had none for my work.

XQ 212 Do you mean that you had never used a microscope in connection with your work prior to the date mentioned?

A Not for my regular commercial work or as a tool in my recording department.

XQ 213 Not even for experimental work in such department?

A No.

XQ 214 Do you know whether or not microscopes had been used prior to this date to any extent by others including

Mr. Edison in investigating the character of the groove on sound records for phonographs?

A I think they were used in experiments with the 200 molded record.

XQ 215 The general character, then, of the record groove in the case of records of the kind under consideration, that is, where the record was made with a cutting stylus of circular or substantially circular cross section, was well understood at the time in question, was it not? I refer more particularly to the conformation of the groove, the effect produced by jumping of the cutting stylus, and the possible overlapping of adjacent grooves/

A It was known at this time that overlapping of a groove caused a repeat in the record and that jumping out caused an unclearness or rattle when reproduced.

XQ 216 My preceding question does not seem to have been fully understood by you. What I meant to inquire was whether prior to the date in question, the appearance of the record grooves or of the recorded surface as a whole where jumping of the cutting stylus or overlapping had occurred, was understood.

A If at this time I had looked at a record through a microscope I could ~~xxxxxxx~~ recognize placed with defects as above mentioned.

XQ 217 At what stage exactly, in your experiments herein-
before testified to as having been made in an attempt
to perfect the 200 thread recorder, did Mr. Edison have
his draftsman make the sketch, a reproduction of
which you have produced and which is now in evidence as
Defendant's Exhibit No. 1, Miller's Reproduction of
original sketch.

A I think I have answered this question before that
after this drawing referred to was made Mr. Edison gave
instructions to have some ~~1000~~ recorder styluses
of a diameter of ten one-thousandths
of an inch made and suitable reproducer balls to fit grooves
made by these styluses. It was but a very short time,
say not more than two or three days before the results
I ~~xxxxxxx~~ obtained with these new styluses were
equal to those results which I was making with 100 feed
and the 40 thousandths of an inch diameter recording stylus.

XQ 218 You have stated that you were present when the
original sketch just referred to was made by Mr. Edison's
draftsman. Where was such sketch made?

A On the second floor of Mr. Edison's laboratory, ^{West} Orange,
New Jersey.

XQ 219 Do you remember any circumstances connected with the
actual making of said sketch?

A I was talking with Mr. Edison at the time regarding the experiments and he, during the course of conversation, said to me, "Come up stairs and I will have Herter lay it out on a drawing board". He told Mr. Herter what circles he wished to have drawn and gave him detailed instructions.

XQ 220 Was such original drawing in pencil just like your reproduction?

A It was.

XQ 221 Do you remember the order in which the several lines and curves which go to make up this sketch were drawn in the making of said original lines?

A I do not.

XQ 222 Was there any delay involved in your being furnished with cutting styluses having a diameter of ten one-thousandths of an inch, after directions for the making of such styluses had been given by Mr. Edison?

A As near as I can remember the sapphire department did have some trouble making these styluses and there was some delay before I received satisfactory ones, but just how long I do not remember.

XQ 223 Had you ever prior to receiving these styluses of a diameter of ten one thousandths of an inch, used styluses for cutting record grooves having a diameter less than approximately 20 thousandths of an inch which

is the diameter you have heretofore testified has been used in cutting ~~two~~ ^{two} hundred thread records?

A I had not. As far as I can remember I know of no instance where I have used ~~the~~ ^a recording stylus of a smaller diameter, ^{than} 20 thousandths of an inch prior to this time.

XQ 224 Do you understand that the suggestion for using a stylus having a diameter of approximately ten one-thousandths of an inch was derived from the sketch your reproduction of which has been introduced as an Exhibit?

By Mr. Dyke:

Question is objected to on the ground that it ~~is~~ calls for the conclusion and not the knowledge of the witness.

A It was.

XQ 225 Did Mr. Edison ~~suggest~~ suggest the use of a recording or cutting stylus having a diameter of ten one-thousandths of an inch immediately upon the completion of the sketch in question?

A He did.

XQ 226 Did he direct explicitly the placing of every line or curve which appeared on said sketch?

A The original sketch he did.

XQ 227 Do you remember how he directed the curve to be drawn which on your reproduction of said sketch which

~~has been introduced into evidence as Defendant's Exhibit~~

No. 1 is marked "10/1000 needle 10" in diameter".

A I do not remember.

XQ 228 How did you direct said curve to be drawn or how did you draw the same, when you had this reproduction made?

A This drawing is made on a scale of one inch to every thousandth. ~~This drawing was made by first~~ drawing the perpendicular line, which I am now marking "A" ^{"B"}. A circle _A was then drawn 40 inches in diameter, ~~the~~ ^{center} ~~with its~~ ~~center~~ on the vertical line.

Two vertical lines "C" and "D" were then drawn parallel with the first vertical line "A" and at equal distances each way, the distance between "C" and "D" being 10 inches or equivalent to ten thousandths of an inch, which in this drawing is to represent the width of ^a 100 thread record. A horizontal line "E" was then drawn connecting the vertical lines "C" and "D" and touching the curved line "B" at the point "F". Another horizontal line "G" was drawn connecting vertical lines "C" and "D" at ~~the~~ these two points where the curve intersects said lines at "H" and "H" prime. ~~The distance~~ ~~between the line "F" and "G" shows the~~ distance the recording stylus will travel from the maximum depth of groove to the surface. ~~Now in order to get this~~

I next drew two vertical lines "J" and "K" at equal distances from the vertical line "A", the distance between these two lines being five inches, representing five thousandths of an inch, the width of the 200 thread feed. It was then determined by setting a compass ~~xxxxxxx~~ in such a manner and that the points were at such a distance that by placing one of its points on the line "A" it would draw a circle through the points "H" "F" and "L" and on measuring ~~xxxxxxxxxxxxxxx~~ it was found that the diameter of this circle was 10 inches. This last curve is the one which you refer to in your question.

XQ 229 Does the description which you have just given of the manner in which you made this reproduction of the original Edison sketch, so far as it goes, also describe the manner in which such original sketch was drawn?

A As near as I can remember, it does.

XQ 230 I note on this exhibit sketch a third circle or part of a circle also passing through points "H" and "L" but not through the point marked "F". Please state what this circle is intended to represent.

A This circle which I mark "N" is 20 inches in diameter representing a needle of 20 thousandths of an inch in diameter.

XQ 231 When in your answer to XQ 228, you stated that the ^{lines} ~~the~~ distance between "C" and "D" on this Exhibit sketch is to represent "the width of a 100 thread record", what did you mean?

A I made a misstatement; I meant to say that the distance between "C" and "D" ~~sketch~~ represents the ^{maximum} pitch of the groove on a 100 thread record, that is the ^{width} of groove which can be cut on such a record without overlapping the adjacent groove.

XQ 232 Similarly when at another point in this answer to XQ 228 you stated that the distance between lines "J" and "K" represented "the width of the 200 thread feed", what did you mean?

A I meant that this was the maximum width that could be cut by the stylus without overlapping in the case of a 200 thread record.

XQ 233 This morning, counsel for complainant was requested to have a suitable search made either by you or some other party, for records showing who was employed at your recording laboratory as piano player during the time when the experiments on the so called Amberol or 200 thread records were first taken up by you. Has any such search been made, and if so, with what results?

A Search has been made and the records show that during this time Mr. Albert Benzler was our pianist.

XQ 234 Do said records show that any one besides Mr. Benzler was employed at this time in this capacity?

A There was another piano player at the time by the name of Mr. Wangeman but most of his time was taken up in experimental work. He has since died.

XQ 235 Was Mr. Benzler regularly employed?

A He was.

XQ 236 During what time was he a regular pianist at your laboratory?

A I do not know what you mean by "regularly employed". We used most of Mr. Benzlers time from a period in 1899 until July ~~1904~~ 1909.

It is stipulated in and between parties hereto, that the records of the complainant Company show that A. Benzler was employed in its recording department as a pianist on July 17, 1899 at a salary of \$25.00 per week; that on January 18, 1902 he quit such employment; that on August 4, 1902 he was re-employed at the same salary which on February 23, 1903 was increased to \$30.00 per week; that on October 3, 1904 his salary, which previously was charged to the Orange office, was changed to the New York pay roll of the complainant Company, and that on July 10, 1909 he quit the employ of the complainant Company, his employment by such Company being continuous from August 4, 1902 to July 10, 1909.

XQ 237 In your answer to XQ 79 you have stated that the 200 thread records made by you during the period from 1892 to 1895, using the Model C Edison phonograph, were intended for entertaining purposes. Do you remember

any of the selections on said records.

A No sir, I do not.

XQ 238 Do you remember timing the length of playing or reproduction of any of said records?

A I knew at the time the length of duration of this record, but do not remember it now. This information was necessary in order to time records which were to be played on them.

XQ 239 Is it your recollection that said records were capable of playing for a longer or shorter time than four minutes?

A It was for a longer ^{period} ~~time~~ than four minutes. It possibly ran five or six minutes.

XQ 240 How did the dimensions of these early 200 thread records compare with those of the present Amberol record?

A The dimensions were about the same size, but in those days records were recorded at a speed of $\frac{1}{2}$ from 144 to 150 revolutions per minute.

XQ 241 Can you state what surface speed of the record past the stylus, this number of revolutions per minute ~~xx~~ gave with records of the kind under consideration?

A I do not remember.

XQ 242 This would be, however, a matter of simple calculation, would it not?

A It could be readily figured out.

XQ 243 What is the number of revolutions per minute and surface speed used in playing your present Amberol records?

A The speed used in playing our Amberol records is 160 revolutions per minute, and as near as I can recollect the surface speed past the record stylus something like 1120 to 1140 inches per minute.

XQ 244 What is the number of revolutions per minute and surface speed employed in playing the present Edison Standard record, which I understand has 100 threads per inch, and is of approximately the same dimensions as the 200 thread, or Amberol record?

A The speed and dimensions are the same in the case of the Standard as of the Amberol records.

Adjournment to 10:30 A.M. January 26, 1912.

By reason of pressing engagements of the witness and upon agreement of counsel, the witness Mr. Miller, is excused from the stand with the understanding that he is again to take the stand upon convening on the morning of Saturday, January 27, 1912, and that his testimony notwithstanding the interruption, may be printed consecutively in the record.

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Cross Examination of Mr. Miller continued by Mr. Oberlin.

XQ 245 Please state, if you know, whether hearing tubes or horns are used for reproduction purposes with the type of commercial machines at present manufactured by your company.

A These machines are furnished with the recording arm and a hearing tube as far as I know.

XQ 246 Is it necessary where hearing tubes are used for reproduction purposes, that the volume of the reproduced sound be as loud as where a horn is employed?
A It is not.

XQ 247 Is it desirable that it be as loud?

A It is not.

XQ 248 Please state, if you know, the extent of the use of phonographs for commercial purposes, has compared with its other uses? By commercial use I refer to use in business offices and like places for dictating letters, memoranda and the like.

A ~~Phonographs are used to a larger extent than for commercial use.~~ Phonographs and talking machines are used to a larger extent ~~than for commercial use.~~ for amusement purposes than for commercial use.

XQ 249 Do you know what were the original expectations of your company as to the prospective extent of use of

commercial machines?

A I do not know.

XQ 250 Have you made any further endeavor, since you were last on the stand, to recover the original sketch, a reproduction of which you have made and which is now in evidence as Defendant's Exhibit No. 1?

A I have not.

XQ 251 You have heretofore stated on cross examination that you do not remember that you made any complete records in the course of the experiments which you began in the latter part of 1903 or thereabouts, to produce a 200 thread record. How many partial records, that is, how many different selections did you record in the course of these experiments?

A No complete records were made that I can remember, and as to the number of partial records made I do not remember.

XQ 252 Can you give us any idea as to the number of partial records thus made?

A I cannot.

XQ 253 Was the phonograph which you used in testing out these experimental records as to their reproduction qualities, one of your standard makes of machines save for the changes indicated by you in answer to XQ 134.

A It was.

XQ 254 Which standard make of machine was it then, that is what was its trade name?

A I think it was called Model K but I will not be certain about it. It was the same style of machine which is today called the Triumph.

XQ 255 Did you use ~~a~~ ^{the} microscope which you have heretofore stated Mr. Edison furnished you in connection with these experiments from the very first, or only at a later stage in the course of said experiments?

A As near as I can remember it was at the later stages of ~~these~~ ^{these} experiments. I also wish to state that since giving my testimony day before yesterday, I have found out that we ~~have~~ ^{had} a microscope of this kind in our department some considerable time before experiments were made on these 200 thread records. They were used by us to inspect the master~~XXXXXX~~ records made for our two minute or 100 thread molded records, to see if the cut was free from shades or blinds. A blind in a master record is caused by some foreign matter sticking to the cutting edge of the recording stylus or needle and causing the needle to cut a ragged groove. A "shade" is practically the same defect but very small indeed. These "shades" do not affect the sound reproduction, but at that time it was very difficult to make molded records from a master

with this defect.

XQ 256 Was this microscope which you now state you had been using in your department some considerable time before experiments were made on these 200 thread records of the same magnifying power as the one which you used for examining such experimental 200 thread records?

A It was.

XQ 257 But it is still your recollection that Mr. Edison furnished you with a microscope specially for examining these latter records, ^{is} ~~xxx~~ it?

A Mr. Edison furnished me with this microscope and not specially for this purpose, as I stated in answer to Q 33. The special purpose ^{is} ~~with~~ which Mr. Edison furnished me with this microscope was to inspect the masters for the 100 thread records which we were to use for molding purposes, when ~~XXXXXX~~ we started to make masters for this special molding process, and I used this same microscope later in connection with the Amberol. In giving my previous testimony I have confused the beginning of work on the molded 100 thread record with the beginning of work later on the Amberol record, and I only had this one microscope for these purposes.

XQ 258 But I understand you did not use this microscope to examine the earlier experimental record which you made when you began experimenting with the 200 thread or Am-

berol record, is this correct?

A As far as I can remember, it is.

XQ 259 You did, however, test out these earlier records as to their reproduction qualities and found them deficient in volume. Is this correct?

A It is.

XQ 260 It was then that you used the microscope to examine the record grooves, was it, with the results that you have previously testified to.

A When ^{these particular} experiments were tried ^{the making of records} that is, 200 thread ^{records} with a 20 thousandths needle, two or three diaphragms were adjusted with these needles and tests were made of them. ~~They~~ ^{The records} were found to be rather weak and the loudest of them did not seem to be perfectly clear and ~~they~~ would sound what we call in the laboratory term, "sensitive". We would then rebuild these diaphragms, make various adjustments on them, try them again with no better results. Also different horns were tried and harder waxes and I think after these experiments were concluded it was then when the microscope was used. This might have been a week or it might have been two weeks after the first tests were made. When this microscope was used I continued with experiments with still harder waxes and with no better results, although the harder waxes for a time did seem to make some slight improvement over ~~the~~ ^{the} softer waxes.

XQ 261 How long was it after you first used the microscope for these experiments, before the drawing or sketch was made concerning which you have heretofore testified?

A As near as I can remember, four or five weeks.

XQ 262 Did you report the results of your examination of these experimental records under the microscope at once to Mr. Edison?

A I did not. I usually reported to him the results of the sound reproduction.

XQ 263 How frequently did you make these reports to Mr. Edison during this period of experimentation?

A Once or twice a week.

XQ 264 How soon was it after you reported the results of your examination of these records under the microscope to Mr. Edison, that the drawing or sketch above referred to was made?

A About half an hour.

XQ 265 And immediately after this drawing or sketch was made as heretofore testified to by you, you were directed to use a stylus of smaller diameter than you had been using theretofore. Is this correct?

A It is.

XQ 266 Did you offer any suggestions to Mr. Edison at the time you reported to him the results of your examination of these experimental records under the microscope?

A I do not remember. I might have said that the needle
was too big which we were using, but I have ^{positive} no recollection.

XQ 267 Had you discussed the size, that is the diameter
of the recording needle with Mr. Edison, at any time
during the course of these experiments prior to the time
when you thus reported to him the results observed
by you through the microscope?

A I did not.

XQ 268 Was the Mr. Benzler to whom you referred in
your answer to Q 45 the same Mr. Benzler referred to by
you in your answer to XQ 233?

A He was.

XQ 269 Was Mr. Hofbauer, to whom you also referred
in your answer to Q 45 employed by you in the recording
department of Thomas A. Edison, Incorporated, during the
period when you were experimenting on these 200 thread re-
cords?

A I am not sure that he was.

XQ 270 Would the records of your Company show the period
of employment of Mr. Hofbauer?

A I think they would, and I will have them looked up,

~~xxxxxxx~~

XQ 271. Do you remember what was the shape or form of
the recording stylus in the Model C machine with which
you have testified you made a number of records back

in the early ninties?

A As nearly as I can remember
A ~~XXXXXXXXXXXXXXXXXXXX~~the recording stylus was
of cylindrical form, the end of which was slightly cupped.

XQ 272 What, if you remember, was the shape or form of
the reproducing stylus in this machine?

A It was also a cylinder with a spherical or ball shaped
end.

XQ 273 Do you consider the reproduction secured with
your present 200 thread or Amberol record better or worse
than that secured with your 100 thread or Standard record?

A I consider them about equal.

XQ 274 It would be entirely feasible, would it not
to use the same diameter of cutting stylus for making
said 100 thread or Standard record, as for making the 200
thread or Amberol record, would it not?

A ~~XXXXXXXXXXXXXXXXXXXX~~ As good a record
can be made with the Amberol cutting stylus with 100 feed
as can be made with the same needle with a 200 feed.

Cross Examination closed.

Re Direct examination by Mr. Dyke.

RDQ 275 Have you any ^{office} records which you have found
subsequent to your former testimony by which you can
more accurately fix the time when the Amberol record was
developed?

A The office has given me data showing that the recording department moved to 69 Fourth Avenue, New York City March 1st, 1904, and as near as I can remember experiments began within one or two months after we had removed to this laboratory.

RDQ 276 What season of the year, as best you can remember, was it that the work in the development of the Amberol record was done?

A It was either in the Spring or Fall of 1904.

RDQ 277 Are you certain that it was some time within the year 1904 and not as late as the Spring of the following year?

A I am.

RDQ 278 In determining the normal setting of a recording stylus for the production of an original engraved record ~~what~~ by what are you governed; do you measure the depth to which the needle is cutting or do you otherwise determine such setting?

A Such setting is determined by looking with the microscope and comparing the width of cut with the width of wall.

RDQ 279 For how long a time past has it been your custom to determine such normal setting with the aid of a microscope?

A Since we started to make masters for our 100^AStandard thread records somewhere around 1899 or 1900.

RDQ 280 What was your practice prior to that time?

A As far as I know, and could judge with the ordinary magnifying glass, the depth was about the same.

RDQ 281 In cutting the groove for the 100 thread record from 1899 or 1900 on, what is your present knowledge as to the depth of the groove so obtained?

A ~~XXXXXXXXXXXX~~ As far as I know the depth then was the same as it is now. In answer to XQ 122 I stated that the normal depth of the cut was seven eighths of a thousandth. I ~~may~~ find that I have this confused with others that I have made and that the normal depth of groove is about a half of a thousandth and not seven eighths, and the depth which the needle can cut without gouging out adjoining walls is five eighths of a thousandth, about.

RDQ 282 From what time does your study of phonograph record grooves by means of enlarged drawings, date?

A From the time Mr. Edison made his first drawing, in connection with the Amberol record.

RDQ 283 Prior to that time had you been in the custom of measuring or calculating the depth of record grooves? X in your recording work?

A I had not.

Re direct examination closed.

Re cross examination by Mr. Oberlin.

RXQ 284 How does a comparison of the width of a cut with the width of wall enable you to measure the depth to which a recording stylus or needle is cutting?

A ~~By making a drawing of a cut and examining the same~~
There is a relation between the width and the depth of the cut. The wider the groove the deeper the cut.

RXQ 285 Is this relation the same or different for styluses of different diameters?

A ~~THAT~~ I do not know without laying it out in the drawing, but I don't think it is.

EXQ 286 What diameter of stylus did you have in mind in your answer to RDQ 281?

A I had in mind a 40 thousandth stylus.

RXQ 287 This diameter of stylus is used in cutting which kind of record?

A The two minute or Standard record having 100 threads to the inch.

RXQ 288 What is the normal depth of groove at which you set the record, ^{ing} stylus used in cutting Amberol or 200 thread records?

A The same as ~~XXXXXX~~ for 100 thread records.

RXQ 289 Has your practice in this respect in the manufacture of Amberol records been uniform?

X Objected to by Mr. Dyle as immaterial.

A It has not.

RXQ 290 Why are you certain that it was either in the Spring or Fall of 1904 that the work in the development of Amberol records was done?

A Because there was foliage, ^{on} a tree which ~~we~~ could be viewed from the laboratory window at which I worked.

RXQ 291 Might it not also have been equally, ^{as well} in the Summer of 1904?

A Yes it might.

Re cross examination closed.

Deposition closed.

Signature and certificate waived.

Met pursuant to adjournment. Parties present as before.

George B. Redfearn, a witness produced on behalf of complainant, being first duly sworn, answers as follows in answer to interrogatories, ~~xxxxxxxx~~ by Mr. Dyke:

Q 1 What is your name, age, residence and occupation?

A George B. Redfearn; 38 years of age; residence 5 Hawthorne Street, Orange, New Jersey; occupation, cost accountant for Thomas A. Edison, Incorporated and Edison Phonograph Works.

Q 2 Please state how you were employed in the years from 1890 to 1896?

A I was in the inspection department of the Edison Phonograph Works in 1890 to the Fall of 1891; was cost clerk and held various positions such as receiving clerk, stock clerk until 1894; was cost clerk, chief billing clerk and purchasing agent until about 1898. Practically all this time I was employed by the Edison Phonograph Works.

Q 3 Where have you been employed since 1896?

A By Edison Phonograph Works, National Phonograph Company, Edison Manufacturing Company, Thomas A. Edison, Incorporated jointly.

Q 4 Where have you been located during all of this time?

A At Orange, New Jersey/

Q 5 Are you familiar with the record of the ~~RECORDS~~ Edison Phonograph Works and with the products produced by the Edison Phonograph Works in the period from 1890 to 1896?

A I am.

Q 6 I call your attention to a phonograph bearing the number 21,289 and ask that you state what this machine is if you know/

A This machine is one which was built and was known as C phonograph. It has always been designated by the letter "C" although sometimes the expressions "Style C", "Model C" and "Class C" were used, all however designating the same C machine.

Q 7 By what Company was this machine put out?

A It was made by the Edison Phonograph Works for the Edison United Phonograph Company.

Q 8 At what time or times were such machines manufactured by the Edison Phonograph Works?

A Outside of the first few samples, ^{which were made earlier;} during the period from 1893 to 1896.

Q 9 Were you familiar with these Style C machines at the time of their production?

A I was.

Q 10 Please examine the machine before you and state if you can, whether you find any departures in the present machine from those manufactured by the Edison Phonograph Works from 1893 to 1896.

A It is the same machine. The stop bar is broken so that it will not stay in proper position and a lead washer has been substituted which fastens the body to the top, and a knob was broken off the knife bar of the shaving device. With these exceptions I find no change ~~and no other exceptions~~ in the machine.

Q 11 Did the Style C machine as produced by the Edison Phonograph Works during the period named, comprise a cabinet of any kind?

A It did not.

Q 12 Please also examine the reproducer on this machine which has the serial number appearing thereon No. 21,708 (directing witnesses attention to Complainant's Exhibit No. 26 - Edison Style C Sound Box No. 21,708) and state whether you find any departures in this sound box from the sound boxes which formed a part of the Style C machine made by the Edison Phonograph Works during said period.

A I can find none.

Q 13 Have you a personal recollection of the diameter of the recording and reproducing styluses which were placed

on the sound boxes of the Style C machine made by the Edison Phonograph Works during the period from 1893 to 1896

A I have not.

Q 14 Can you find any answers in the books of the Edison Phonograph Works which would indicate what the diameter of such recording or reproducing styluses was during the period in question?

A On page 291 of a book which is stamped on the back "Edison Phonograph Works, Details of Phonographs and Speakers" I find a record of the speaker No. 20,708 . This record reads as follows:

No. of Speaker	Class	Details
20708	C Hook	May 18th, 93 Shipped to A.E.Kennelly " c/o Edison Laboratory. New Speaker 20708 Tested & Inspected by Burnett May 13'93. New style sensitive speaker same as used on English Mach. .025 Rec. Stylus. Memo A.O. Tate."

Q 15 Where did you find this book?

A In the vault in the basement of the Edison Phonograph Works office building.

Q 16 What period does the book in question cover?

A From October 1891 to July 1893.

Q 17 In May 1893 when the entry above referred to appears to have been made, did you have any connection with the keeping of this book?

A This record was made by a clerk under my supervision.

Q 18 What does the expression "C hook" in the column "Class" mean?

A The letter C indicates the class by which this particular speaker was known, the word hook indicates the method of fastening or connecting the recorder and reproducer arm to the diaphragm. This connection was made by a piece of wire hooked at each end.

Q 19 What does the expression "English Mach." mean?

A It means the class C machine.

Q 20 And by that you mean, do you not, machines of the type before you as Complainant's Exhibit No. 25?

A I do.

Q 21 What does the expression ".025 Rec. Stylus" mean?

A It is a record showing the size of the recording stylus used in that class speaker. It indicates that the diameter of the recording stylus is 25 one thousandths of an inch.

Q 22 Have you been able to locate any other records of the diameter of recording or reproducing stylus made use of on these Style C machines?

A I have not.

Q 23 Have you made a search for that purpose?

A I have.

Q 24 Please state what this paper which I now hand you is, if you can do so.

A It is original order No. 127 of the Edison United Phonograph Company to Edison Phonograph Works giving instructions to ship to Edison Bell Phonograph Corporation Limited,
London, 650 phonographs commercial type, ~~250~~
250 phonographs domestic type
100 phonographs automatic type
10000 dictation cylinders
4000 postal cylinders
1000 postal cases

This order is dated January 5, 1893 and is signed by G. N. Morison, Secretary.

Q 25 Where did you obtain this paper?

A This was on file in the vault of the Edison Phonograph Works on the second floor of this office.

The paper identified by the witness is introduced in evidence with the designation: Complainant's Exhibit No. 27 Edison United Phonograph Company order of 1893.

Q 26 What does the expression "650 phonographs commercial type" in this order designate?

A It designates 650 machines known by us as Class C. In other words 650 machines of the same type as Complainant's Exhibit No. 25 equipped with the speaker like Complainant's Exhibit No. 26.

Q 27 What does the expression "250 phonographs domestic type" designate?

A In designates 250 phonographs of a class then known by us as Class H. This differed from the Style C machine in that it was made for reproducing only, having a special reproducer and arm made for that purpose. It had no shaving device and could not be used ~~xx~~ in connection with postal or mailing cylinders. I have here a phonograph arm of the type referred to having therein a special reproducer of the kind referred to, which is marked with the number 20,163. This combination as it stands was known as "Music Reproducer and Arm."

The arm and reproducer produced by the witness are introduced in evidence with the designation:
Complainant's Exhibit No. 28 - Edison
~~Style H~~ music reproducer and arm for
Style H machine. No. 20,163

Q 28 How many threads per inch were the Commercial type or Style C machine, and the Domestic type or Style H machine arranged to feed?

A Two hundred.

Q 29 What were the "Automatic type" phonographs included in this order?

A These were machines of the Class S type which had a feed of 100 threads per inch equipped with an automatic coin slot device.

Q 30 Was this order filled?

A It was.

Q 31 What was the practice of the Edison Phonograph Works during the period from 1893 to 1896 in respect of keeping a record of the serial numbers of phonographs?

A The Edison Phonograph Works in their shipping department kept a record in books known as Shipping Record of Phonographs which books contained the numbers of phonographs and in which were made a record giving the date and the party to whom shipment was made.

Q 32 What was the practice, at the time in question, in the giving of serial numbers to phonographs themselves?

A The bodies of the different kinds of phonographs were stamped with a number which when the phonograph was assembled, became the phonograph number by which it was thereafter known. These numbers were in series and in each series the numbers were consecutive.

Q 33 Have you the record of shipment of the machines covered by the order which you have produced and which is in evidence as Complainant's Exhibit No. 27?

A I have.

Q 34 Are you personally familiar with this record?

A I am, and have had frequent occasion to refer to it.

Q 35 Please examine this record of shipment and state in a general way what it shows with respect to the Style C and Style H machines which were put out by the Edison Phonograph Works.

A This record indicates that the serial number of the Style C and H phonographs were from ~~2000~~ upwards, those machines which were shipped on order ~~20113~~¹²⁷ being from 20113 to 21084. Between these numbers there are some missing, probably due to defective castings which did not pass inspection. Beginning in January 1895 and extending to about the end of March 1895 there is a record of 500 machines Style C with numbers ranging from 21085 to 21584 both inclusive, ~~which were~~ shipped to S. F. Moriarty who was connected with the Edison United Phonograph Company, and in May 1896 there is a record of about 100 machines, ^{Style C ranging from} 21585 to 21690 with some omissions. These machines were shipped to Wambersie & Sons, Rotterdam, on orders of the Edison United Phonograph Company. The dates of shipment of the first lot mentioned, ^{on order 21 127} range from May 1893 to August 1893.

Q 36 What is the highest serial number applied to either Style C or Style H machine which you find in this record?

A 21690.

Q 37 And on what date does it appear that this machine was shipped?

A May 28, 1896.

Q 38 Do you know whether since that date any Style C or

Style H machines were shipped by the Edison Phonograph Works?

A There is a record of a C phono body No. 21683 shipped on May 11, 1897 to Edison United Phono Company, London, England. This is the latest date of shipment I find in this record.

Q 39 Please state, if you know, when the manufacture and sale of Style C and Style H machines was discontinued.

A I have no recollection of any order subsequent to that for machines which were shipped to Wamborsie & Sons.

Q 40 Please state the lowest and highest serial numbers which were applied to these Style C and Style H machines by the Edison Phonograph Works.

A The lowest number was 20001, the highest 21690.

Q 41 And between these numbers, can you state approximately how many of the numbers are skipped in the record?

A About 165.

Q 42 Can you tell approximately how many Style C and Style H machines were made and shipped by the Edison Phonograph Works as appears from this record?

A About 1275 Style C and 250 Style H.

Recess for luncheon.

Q 43 What is the title of the book to which you have referred and which contains the records which you have just referred to.

A This book has the title "Shipping Record of

Phonographs 20,001 to 25,000".

Q 44 Where did you obtain this book?

A In the basement of the office building.

Q 45 Where did this Style C phonograph No. 21,289 in evidence as Complainant's Exhibit No. 25, come from?

X I have reference to the machine itself and my question does not include the speaker No. 21,708, Complainant's Exhibit No. 26 which is now on this machine.

A It was found in the repair department of the Edison Phonograph Works.

Q 46 Were you present at the time?

A I was.

Q 47 How does the condition of the machine at present compare with its condition when so found?

A It is somewhat cleaner.

Q 48 Please consult the shipping record to which you have referred, and state what, if any, entries you find therein with respect to this Style C phonograph No. 21,289, Complainant's Exhibit No. 25.

A I find an entry that it was shipped February 15th, 1895 to S. F. Moriarty, London, England.

Q 49 Do you know how this machine came to be in the repair department of the Edison Phonograph Works?

A I do not.

Q 50 From what source did the music reproducer No. ~~21,289~~ 20,163 and same in evidence as Complainant's Exhibit No. 28

come?

A I have had it in my possession for a number of years, perhaps ten.

Q 51 Please explain somewhat more fully than you have already what the Style H phonograph, of which you have testified that 250 were made, was like.

A These Style H phonographs were like the Style C phonograph before me, Complainant's Exhibit No. 26, with the exception of the following particulars. The Style C machine was equipped for recording and reproducing, the speaker having a recorder stylus and a reproducer bell set in a single arm. The Style H machine was equipped for reproducing only, the reproducer having only a reproducer ball ~~stylus~~ and no recorder stylus. The reproducer of the style H machine had also a heavy lead weight, the speaker of the Style C phonograph having a light counterbalance weight made in two parts. The Style C phonograph had a shaving device which the Style H phonograph had not. The speaker of the Style C phonograph was adjusted for tracking by a cam while the reproducer of the Style H machine was adjusted for tracking by means of a screw. The arm of the Style H machine was so equipped as to be adjustable only for the height of the record, while the arm of the Style C machine was adjustable so that it could be used

with the standard size blank or record and a smaller one which was used for mailing. As the Style H machine was fitted for only the standard size record, the scale for adjusting the governor had no mark indicating the proper position of the speed adjusting lever for the small cylinder and shaving. Should you substitute a music reproducer and arm Exhibit 28 for reproducer, ^{Exhibit No.,} 26 and its arm and shaving device and replace the speed indicating scale with another, ~~it~~ ^{which} would not show the "small" and "shaving" marks, you would have practically the same machine as the Style H.

Q 52 Please state ~~xxx~~ what you mean by "practically" the same.

A There might be a small difference in design of the tack rod sleeve from that which was used on Class H, but this would make no difference in the practical working of the machine.

Q 53 Have you any record with respect to the musical reproducer No. 20163 which forms a part of Exhibit No. 28?

A I have none, but I have a record of musical reproducers No. 20162 and 20165. On page 372 of the detail book previously referred to I find that music reproducer No. 20162 and arm was a part of Style H phonograph No. 20501 which was shipped on June 17th, 1893 to S. F.

Moriarty, London, England, and on page 378 of the same book I find that music reproducer No. 20165 and arm was a part of Style H phonograph No. 20510 which was shipped on June 24th, 1893 to S. F. Moriarty. As these phonographs were tested on June 16th, and June 17th, 1893 respectively, this would indicate that these reproducers were made at about that date, and as No. 20163 was in the same series it would also indicate that it was made at about that time.

Q 54 Have you any record with respect to the speaker No. 21,708 in evidence as Complainant's Exhibit No. 26?

A I have none. The highest number of speaker of which I have record is No. 21145, we having discontinued the use or keeping of the detail book about September 13, 1893. As this number is considerably higher than that of which we have record, this would indicate that this speaker was made at a subsequent time probably in connection with the second order for Style C phonographs which were made in 1895, as this reproducer was made only for use on Style C machines.

The Examiner is requested to mark the books referred to by witness for identification and it is stipulated that these books shall be open for inspection on behalf of ~~XXXXXXXXXX~~ ~~XXXXXXXXXX~~ defendant at any reasonable time, but that for the present at least said books which are frequently used for the purpose of reference shall

remain in the custody of complainant.

Direct examination closed.

Cross examination by Mr. Oberlin.

Is
QX 55 ~~XXX~~ the Edison Phonograph Works, with which you testified you were at one time connected, the name of a Company or simply of a plant?

A It is the name of a Company.

XQ 56 Is said company still in existence and doing business?

A It is.

XQ 57 What is its present business?

A The manufacture of phonographs, record blanks, kinetoscopes, numbering machines, etc.

XQ 58 What is the relation of said Edison Phonograph Works to Thomas A. Edison, Incorporated, the complainant herein.

A All their product practically, is manufactured for Thomas A. Edison, Incorporated.

XQ 59 Thomas A. Edison, Incorporated, then, do not manufacture, themselves, the phonographs and supplies which they sell. Is this correct?

A They do not manufacture phonographs. themselves, some of the supplies they purchase from parties other than Edison Phonograph Works and they manufacture the musical records themselves.

XQ 60 What was the Edison United Phonograph Company original order No. 127 of which you identified in your answer to Q 24?

A It was a Company which then had the rights for the Edison sale of phonographs in countries other than the United States of America and the Dominion of Canada.

XQ 61 Do you know whether this last named Company is still in existence?

A I do not know.

XQ 62 What was the Edison Bell Phonograph Corporation Limited, to which the goods on said order No. 127 were to be shipped?

A It was a Company which had the exclusive rights under the Edison United Phonograph Company, for the exploitation of the Edison Phonograph in Great Britain and Ireland.

XQ 63 Is this last named Company still in existence, do you know?

A There is an English Company of a somewhat similar name but I am not aware of its relation to the Company referred to.

XQ 64 Does the Edison Phonograph Works at present manufacture phonographs for either the Edison United Phonograph Co. or this English Company which you state has a name somewhat similar to Edison Bell Phonograph Corporation,

Limited.

A I do not know.

XQ 65 Have either the Edison United Phonograph Co. or the Edison Bell Phonograph Corporation Limited, ever engaged in the manufacture of Edison phonographs, to your knowledge?

A I have no knowledge of the Edison or Bell Co. The Edison United Phonograph Company did not manufacture.

XQ 66 What was the "inspection department" of the Edison Phonograph Works in which you state you were in 1890 to the Fall of 1891?

A It was a department in which the various parts made by the Edison Phonograph Works were inspected as to their correctness.

XQ 67 You have on direct examination testified that S. F. Moriarty to whom a number of shipments of Style C machines were made, was connected with the Edison United Phonograph Co. What was the nature of his connection with such Company?

A I do not know.

XQ 68 Where did said Company have its headquarters?

A In New York City.

XQ 69 To what point, however, were these shipments to S. F. Moriarty, directed?

A To London, England.

XQ 70 And do I understand that while they were thus consigned to S. F. Moriarty, London, England, these machines were ultimately intended for the Edison Bell Phonograph Corporation, Limited?

A That is correct.

XQ 71 Referring now to the "shipping record of phonographs ^{20001 25000} .020 to .025" which you have heretofore used in testifying and which have been marked for identification by the Examiner, I note a panter applied to the outside of the front cover of this record with writing thereon. Will you please read such writing in the record?

A It reads "Shipping record of M. A. S.M. Phonos."

XQ 72 Can you explain the presence of this panter on the record in question?

A This panter was placed on this book for the purpose of differentiating it from other shipping records giving the same serial numbers. In later years as we developed different kinds of phonographs, we started numbering these new phonographs at No. 1, and it was only a question of time when these new phonographs would be numbered serially as high as the older kinds.

XQ 73 Referring further to this shipping record, and the system of numbering employed at the time that said record was being made, please state whether different series of numbers or different parts of a series

were devoted to different kinds of machines.

A At that time, 1893, we had two series of numbers, the machines under ~~2~~²⁰⁰⁰⁰ 2000 were the regular machines of that date which were used in the United States and Canada and to a limited extent abroad, and ~~2~~^{there was} 2000 series over ~~2000~~²⁰⁰⁰⁰ for the Style C and H machines which were made for the Edison United Phonograph Company with the exception of a few which were shipped to the North American Phonograph Company in the United States.

XQ 74 Then No. 20001, which is the first number appearing in the book under consideration you are positive was the first number applied to machines of this C style are you?

A I am.

XQ 75 And similarly I understand that No. 21690, which also appears in this book, was the last number applied to a machine of this style. Is this correct?

A That is correct.

XQ 76 Is this number 21690 the last number in said book in connection with which you find an entry?

A It is not. There were entries beginning with No. 23001 to and including 25000 giving a record of various M & S.M. Phonos. and bodies therefor, with a few slot machines and shaving machines.

XQ 77 Were any of these machines, shipments of which are found recorded from No. 23001 on, shipped abroad? or were they in the main shipped to points in the United States?

A The majority were shipped to points in the United States. Quite a quantity were shipped abroad.

XQ 78 What is the date of the last shipment you find was made to a point abroad, that is outside of the United States, of machines numbered 23001 or upwards?

A The last record I find giving a foreign destination is May 16, 1896 which included machine No. 23315.

XQ 79 Do you know whether your records, and I am not limiting my inquiry to the particular books which are before us, would show any foreign shipments of machines made subsequently to the date which you have just read?

A They will so show.

XQ 80 Well then, were there any such shipments made to England subsequent to the date in question, viz. May 16, 1896?

A They were.

XQ 81, Were such shipments made more or less continuously and immediately following this date?

A They were.

XQ 82 What kind of machines were thus shipped, I am referring more particularly to England.

A All kinds of phonographs which were manufactured regularly.

QX 83 What kind of machines, if you can state, did you manufacture regularly immediately following this date of May 16, 1896?

A In 1896 we manufactured M phonographs S.M. phonographs, and in the latter part of the year or subsequent thereto, the Home phonograph.

QX 84 But you discontinued the C style at or about the date of the last shipment thereof concerning which you have previously testified, did you?

A As a matter of fact we never manufactured either the C or H phonographs without having previously received an order therefor, so that when we filled the last order we manufactured no more.

QX 85 Do you know whether the sale and use of these machines in England was discontinued simultaneously with your discontinuance of their manufacture and shipment?

A I do not know.

QX 86 What was the M. phonograph and the S.M. phonograph which you state you were manufacturing in 1896. I wish only a brief description of these machines.

A The M. phonograph was a 100 thread machine equipped for both recording and reproducing and was operated by a battery current. It was practically the same

as what is now known as the Palmoral. The S.M. machine was a 100 thread machine equipped for recording and reproducing and was operated by a spring motor and was the first type of the machine which is now known as the Triumph.

Home
XQ 87 What was the K phonograph which you have stated you began to manufacture in the latter part of 1896?

A This was a 100 thread machine equipped for recording and reproducing and was operated by a spring motor, the whole construction being lighter than that of the Triumph.

XQ 88 I understand that both the C and the H styles of machines had the same feed that is, were adapted for operating on machines having 200 threads or thereabouts to the inch. Is this correct?

A That is correct.

XQ 89 For what use was the C machine primarily intended?

A It was primarily intended for use as a commercial phonograph.

XQ 90 What do you mean by "commercial" in your preceding answer?

A It was designed for use in business offices for dictating letters and memorandums thereto which were in turn transcribed.

XQ 91 Were either of the other machines which you have referred to, viz. the M', the S.H., or the Home Phonograph, commercial machines?

A The M. phonograph was. The S.H. phonograph could be used for commercial purposes, but I believe the Home ~~amusement~~ machine was primarily designed for amusement purposes.

XQ 92 How did your sales of these three last named phonographs compare?

A I don't know.

XQ 93 How have the sales of commercial phonographs in general compared with the sales of the other type of phonograph?

A The sale of machines for amusement purposes have thus far far exceeded sales of those designed for business use.

XQ 94 Do you know what were the original expectations of your Company as to the prospects of sales for the commercial type of machines as compared with such other types?

A I do not know.

XQ 95 What was the character of the machine No. 22750 the shipment of which is found recorded in the shipping record hereinbefore referred to by you?

A The type M. machine.

XQ 96 How does the record of its shipment happen to be recorded where it is in this book, viz. without any of the numbers for some pages on either side of it being filled in?

A I don't know.

XQ 97 Who was A. E. Kennedy?

A He was electrical expert employed at the laboratory of Mr. Thomas A. Edison.

XQ 98 Where is he now?

A The last I knew of him he was a member of the firm of Houston & Kennedy of Philadelphia.

XQ 99 Did you know G. W. Morison, who signed himself as Secretary to the order of the Edison United Phonograph Co. here in evidence as Complainant's Exhibit No. 27?

A I did but do not know where he now is.

XQ 100 Who was A. O. Tate whose name appeared in connection with the ~~entry~~^{entry} on page 291 of the book heretofore referred to by you bearing on the back "Edison Phonograph Works, details of Phonographs and Speakers"?

A As to his position at this time I am not certain. He was at one time private secretary to Mr. Edison.

XQ 101 What is the significance of the inclusion of his name in the entry in the question.

A His memorandum was the authority for making delivery of the speaker in question to Mr. Kennedy.

XQ 102 You have heretofore stated that this particular ^{entry} record was made by a clerk under your supervision. Who was this clerk?

A Miss Nettie B. Crane.

XQ 103 I find as a part of this entry or record the notation ".025 Rec. Stylus" which you have stated indicates the diameter of the stylus on the machine or recorder forming a part of the machine, to which this entry relates. Was it customary to note in connection with the entries made in this book the diameter of stylus in the case of "speakers"?

A It was customary to note in this book any information which was thought might be useful for reference, and if there are no previous records ~~ix~~ ^{this would} indicate that those were being made in the usual manner or that no record was necessary.

XQ 104 Was this diameter, viz. ~~xxx~~ ~~x.25~~ thousandths of an inch the diameter of all of the styluses used on these Style C machines? or just of this particular one? viz. the one to which the entry under consideration relates.

A To the best of my knowledge this entry would indicate that this was the diameter of the stylus used on the C speaker, although I am informed that a slight variation in diameter was allowed at that time.

QX 105 What other term is used to designate the "speaker" as found in this book and as occasionally heretofore used by you in the course of your deposition?

A The speaker was generally used to designate an instrument equipped for recording and reproducing.

QX 106 Then does the designation of the diameter of the stylus about which we have been talking, refer to ~~with~~ the recording or reproducing stylus of this machine or to both?

A With us the term "stylus" has always been used to designate a recording stylus, the reproducing sapphire being known as the reproducer ball or button as it was shaped.

QX 107 The entry in this book, then, conveys no information as to the diameter of the reproducer stylus, does it?

A It does not.

QX 108 Are any other records kept by your Company in addition to those illustrated in this ~~xxxxxxx~~ book marked "Details of Phonographs and Speakers" which would show more fully the construction of this Model C machine and of the speaker or recording and reproducing instrument forming a part thereof.

A There were such records but I am unable to locate them.

QX 109 What was the character of these other records?

A There were some drawings and probably instructions to the factory as to the design and construction.

XQ 110 You state, however, that you have been unable to locate any such records as these just described by you.

A I do.

XQ 111 Is your Company at present putting on the market a commercial machine, using the term commercial in the sense hereinbefore defined by you?

A It is.

XQ 112 Do you know the rate of feed, or in other words the number of threads per inch in the completed record in ^{the} case of this machine?

A 150 threads per inch.

XQ 113 Does the Exhibit Style C machine here in evidence as Complainant's Exhibit No. 25 with the speaker mounted thereon which is also in evidence as Complainant's Exhibit No. 26 appear to you to be in condition for satisfactory operation?

A It does not.

XQ 114 In what particular is it not?

A The stop bar is broken, the button is broken off the end of the shaving knife ~~part~~, the machine is short circuited in some manner.

XQ 115 Do the items to which you have just referred, however, interfere, so far as you can observe with the possi-

bility of making a satisfactory record on said machine, providing a proper record blank be used?

A As far as I can observe a record could be made on this machine.

XQ 116 And would it be possible similarly to reproduce such a record on ~~xxxxxx~~ ^{said} machine ?

A Yes.

XQ 117 Did the style H machines have styluses or reproducing needles of the same diameter as this style C machine?

A They did.

XQ 118 How you found any records wherewith you can identify the sound box or speaker ~~xxxxxxx~~ here in evidence as Complainant's Exhibit No. 26 which is at present mounted on the Style C machine in evidence as Complainant's Exhibit No. 25?

A I have not.

XQ 119 Have you no record then of a sound box bearing the number which appears on this sound box, viz. No. 21708?

A I do not know of any.

XQ 120 Are you sufficiently clear in your recollection of the details of construction of the sound boxes or speakers which were used on these Style C. machines to state positively that this Exhibit sound box is identical with those thus used?

A I am. As before stated I have no personal recollection as to the diameter of the recorder stylus and reproducer ball. The general appearance of this speaker is the same as that of the speaker used on the Style C phonograph.

XQ 121 Have you any records which would show the numbers of the particular speakers that were fitted to the different style C machines, the record of which you have produced and concerning which you have testified?

A Our records indicate the number of the speakers which were assembled to various machines from October 1891 to September 1893.

XQ 122 Have you any record of the number of the speaker or sound box if any, that was fitted to the particular style C machine here in evidence as Complainant's Exhibit No. 25 when the same was originally shipped?

A I know of none.

XQ 123 Do your records show whether any sound box was fitted for this machine when it was shipped?

A They do not, but as they were ordered complete, except cabinets, this particular machine was probably equipped with a C speaker.

Adjourned to Saturday, January 27, 1912 at 10:15 A.M.

Met pursuant to adjournment.
Parties present same as before.

XQ 124 This shipping record of phonographs 20001 to 25000 gives serial numbers of phonographs only, does it give speakers or That is of the phonographs without the reproducers, although you have indicated the machine usually included the latter also.

A It does.

XQ 125 Did you keep no similar shipping record of the speakers or reproducers that went with these machines?

A I know of no similar record.

XQ 126 The only record, then, that you have of speakers or reproducers is that found in the so called "Detail book" from which you have selected the record or entry relating to a certain speaker No. 20708. Is this correct?

A That is correct.

XQ 127 Did these Model C machines as they were shipped by you carry, as a part of their equipment, a hearing tube such as I find in connection with the Exhibit machine Complainant's Exhibit No. 28 before us?

A They did.

XQ 128 Was the design and construction of the hearing tubes just referred to, the same as the specimen attached to this machine?

A It was substantially the same. There may have been a

difference in the spring which is inside the forked portion of the hearing tube whereas those supplied may have had an outside spring.

XQ 129 Please describe the construction and design of speaking tube which was used in connection with these Style C machines, such as the exhibit machine before us.

A We furnished with these machines a speaking tube made up of a ~~muze~~^{tapered} flexible mohair covered tube on the large end of which was a rubber or imitation rubber mouth piece and on the small end a nickel plated ferrule.

XQ 130 Can the "music reproducer" No. 20163, which with the ~~the~~ arm therefor has been introduced in evidence as Complainant's Exhibit No. 28 be fitted on to the Exhibit Style C machine before us, Complainant's Exhibit No. 25?

A It can.

XQ 131 How would this be done?

A It would be necessary to remove the swinging arm of the machine, take out the back rod, loosen up the clamp screw in the ^{shaving} knife block whereupon the arm which now contains the speaker could be removed. This ^{music reproducer and} arm could then be placed on the back rod sleeve and clamped thereto and the back rod and swinging arm replaced in their original position.

XQ 132 How did these machines come to be called Style C machines if you know?

A Presumably from the first letter of the word "Commercial."

XQ 133 Why was the Model or Style H machine so called if you know?

A This represented the first letter of the word "Household", by which name these machines were known here.

XQ 134 What does the number vis. No. 21706 of the sound box or speaker in evidence as Complainant's Exhibit No. 26, indicate to you as to the continuance of manufacture of speakers of this type subsequently to the date of speaker No. 21145 which was the highest number of which you state you had a record?

A This would indicate that we had made 563 speakers of this type subsequent to such date, or at least that number.

XQ 135 What was the shape of the recording stylus as you remember it, in the case of the Style C machine?

A Round, with a cupped end.

XQ 136 By round do you mean cylindrical or spherical?

A Cylindrical.

XQ 137 What was the shape of the reproducing stylus as you remember it?

A Cylindrical, with a ball shaped end.

XQ 138 Was the shank of such reproducing stylus of the same diameter as the ~~stylus~~ ball shaped end?

A I don't know.

XQ 139 Do you employ ear tubes on your present type of commercial machine?

A We do.

XQ 140 Referring to the other records than those which you have produced for the purpose of your examinations here, such other records consisting, as you have stated in answer to XQ 110, of drawings and probably instructions to the factory as to the design and construction of this Model C machine and of the speaker or recording and reproducing instrument forming a part thereof, did you have charge of these other records?

A I did not.

XQ 141 Do you know who did?

A No.

XQ 142 Is it the custom of the Edison Phonograph Works to preserve records of this character?

A It is.

Cross examination closed.

Re-direct examination by Mr. Dyko.

EDQ 143 Are all the commercial phonographs now manufactured by the Edison Phonograph Works, arranged to feed 150 threads to the inch as was apparently stated by you in answer to XQ 112?

A The regular machines are equipped to feed 150 threads per inch.

1

We, however, make a few machines principally for school use and to add to plants already equipped with what we usually call the five minute machine, machines equipped to feed 100 threads per inch; probably 75 to 100 machines a year are so equipped.

RXQ 144 Have you known of any instances in which shop records of the Edison Phonograph Workd including working drawings and instructions to the factory have been destroyed ?

A I understand that a short while ago ~~the~~ ^{the} management gave instructions to destroy letter files which were more than ten years old. Some of these letter files ~~were~~ undoubtedly contained instructions to the shop.

Re-direct examination closed.

Re-cross Examination by Mr. Oberlin.

RXQ 145 How recently were these orders of the management for the destruction of files more than ten years old given?

A I have no knowledge.

RXQ 146 Was it one year or five years ago?

A Within one year.

Deposition closed.

Signature and certificate waived.

**Legal Department Records
Phonograph - Case Files**

Edison Phonograph Works v. Edison United Phonograph Company

Edison United Phonograph Company v. Edison Phonograph Works

This folder contains material pertaining to the suit and countersuit brought by the Edison Phonograph Works and the Edison United Phonograph Co. in the New Jersey Court of Chancery. The cases were initiated in 1901 and involved the solvency and holdings of the Edison United Phonograph Co. and the contractual relations between the two companies. The selected items include the bill of complaint by the Edison Phonograph Works; a 12-page draft in Edison's hand and other correspondence regarding the suit; and the bill of complaint and defendant's affidavit in the countersuit.

IN CHANCERY OF NEW JERSEY.

To the Honorable William J. Magie,
Chancellor of the State of New Jersey.

Humbly complaining shows unto your Honor, your orator, The Edison Phonograph Works, a corporation duly organized under the laws of the State of New Jersey, and having its principal office at Orange in said State, a creditor of the Edison United Phonograph Company, who brings this suit for and on behalf of itself and all other creditors and stockholders of said corporation, who shall come in and contribute to the expenses of this suit, that on or about the twenty sixth day of February, eighteen hundred and ninety, the Edison United Phonograph Company was duly organized as a corporation under the laws of the State of New Jersey, with an authorized capital stock of One Million Dollars, divided into ten thousand shares of the par value of one hundred dollars each, and having its principal office at Orange, in the County of Essex; that the purpose of this organization as stated in its certificate of incorporation was exploiting the introduction and use of phonographs, graphophones and speaking machines; that all the authorized capital stock of the said corporation has been issued as fully paid up shares; that in pursuance of the purpose of this organization the said Edison United Phonograph Company on or about the eleventh day of March, Nineteen hundred, purchased from Thomas A. Edison certain letters patent theretofore granted to said Thomas A. Edison, in various foreign countries, for improvements on the phonographs invented by said Thomas A. Edison; and also at or about the same time purchased from the International Graphophone Company, certain foreign patents granted

IN CHANCERY OF NEW JERSEY

BETWEEN,
EDISON PHONOGRAPH
WORKS,

Compl't.

AND

EDISON UNITED PHONO-
GRAPH COMPANY,
Def't.

DO NOT WRITE IN THIS SPACE

BILL AND AFFIDAVITS

Howard W. Hayes,
Sol'r of Compl't.

HOWARD W. HAYES,
COUNSELLOR AT LAW,
765 BROAD STREET,
NEWARK, N. J.

ROOM 302 INDUSTRIAL BLDG.,
765 BROAD STREET.

ORDER BOOK, SEE BLUE ENVELOPE, 70 WALL ST., NEWYORK, N. Y.

to Glichester A. Bell and Charles S. Tainter, in various foreign countries for inventions of them or one of them for improvements on the Graphophone.

Your orator further shows that the said Edison United Phonograph Company, then proceeded to exploit the Phonograph and the Graphophone in various foreign countries, and to sell territorial rights under the said patents, and to organize corporations for introducing the invention described in the said patents; that on account of ~~the~~ poor business management the said Edison United Phonograph Company was unsuccessful in its business enterprises and continued to lose money and has always lost money from the time of its incorporation down to the present time; that on or about the fifth day of March, Nineteen hundred, the said Edison United Phonograph Company, being largely in debt and without the necessary funds to carry on its business in order to secure the debts already owed by it, and to raise money for the further prosecution of its business, executed a mortgage to the Guaranty Trust Company, of the City of New York, for the sum of Three hundred and Fifty Thousand Dollars covering all the assets of every character, and at the time of the execution of the said mortgage the said Edison United Phonograph Company, signed and delivered promissory notes to the amount of three hundred thousand dollars, and that the said mortgage was given to secure the payment of said notes, and that the said notes all became payable on the fifth day of March, Nineteen hundred and One.

And your orator further shows that the following is a statement of the general purport of the said mortgage.

The said mortgage recites that the Edison United Phonograph Company, owes each of ten persons thirty thousand dollars, aggregating Three hundred Thousand Dollars for which it has given its notes at twelve months with interest at six per cent per annum; that the loan made on the said mortgage is

to discharge the Company's indebtedness including its indebtedness to Stephen F. Moriarty, that the said Stephen F. Moriarty agrees to loan the company out of the amount paid him Fifty thousand Dollars on the Company's note, payable in twelve months at six per cent; that for the better securing the payment of the Three hundred Thousand Dollars and the Fifty Thousand Dollars, the Company has deposited seventeen hundred and twenty nine six per cent preference shares of the par value of ten pounds each and fifteen hundred and forty seven ordinary shares of the par value of one pound each, and five per cent first mortgage debenture stock of the par value of twenty seven thousand, two hundred and sixty pounds, all being securities of the Edison Bell Consolidated Phonograph Company, Limited of London, England; also all the Company's interest in the Deutsche Edison Phonograph Gesellschaft, Limited of Cologne, Germany, incorporated on or about October thirtieth eighteen hundred and ninety five, also all the Company's rights in the Compagnie Francaise du Phonographe Edison and in its shares and all the rights of the Company in a contract dated August ninth, eighteen hundred and eighty nine, between it and Bauer & Co., for the organization of a corporation in Austria and Hungary, and all the Company's rights in the proceeds of sale of certain phonographs stored in New York and all the Company's rights in letters patent for phonograph graphophones, etc, owned by it in Norway, Sweden, Denmark, Portugal, Belgium and any other Country, and all the Company's rights in contracts theretofore or thereafter to be made with the said above mentioned companies and all the other assets of the Company then owned or thereafter to be acquired, together with its net income.

To secure first, a note of Fifty thousand Dollars to Stephen F. Moriarty, and after the payment of it to secure equally the said ten notes aggregating three hundred thousand dollars.

And your orator further shows that on or about the seventh day of March, Nineteen hundred and One, the National Bank of North America, in New York, a corporation of the State of New York, being then the owner of one of the said notes of Thirty thousand Dollars, given by the Edison United Phonograph Company, and secured by the said Mortgage, which said note became due and payable on the fifth day of March, Nineteen hundred and One began a suit in the Supreme Court of the State of New York in and for the County of New York, against the said Edison United Phonograph Company, for the sum of Thirty thousand Dollars which said suit was commenced by attachment on the ground that the Edison United Phonograph Company, was a corporation of this State, and not a resident of the State of New York, that the said writ of attachment was levied upon the Guaranty Trust Company of New York; that such proceedings were thereupon had in said suit, that upon the twenty ninth day of March, Nineteen hundred and One a judgment for the sum of Thirty One thousand and Three hundred and Sixty-nine Dollars was entered in said Court in favor of the said National Bank of North America and against the said Edison United Phonograph Company, which said judgment remains wholly unsatisfied.

And your orator further shows that the said mortgage given by the said Edison United Phonograph Company, to the said Guaranty Trust Company, covers all the assets of the said Edison United Phonograph Company, and that the assets of the said Edison United Phonograph Company are of much less value than the amount which the said mortgage is given to secure, and that the interest of the said Edison United Phonograph Company in said English, German and French Companies is of little or no value, and that the shares of the said companies owned by the Edison United Phonograph Company are of little or no value, and that the right of the said Edison United Phonograph Company in the said contract with Bauer & Co. is of no value; that the said company's rights in the said Phonographs claimed to be stored in New York, is of little or no

value, and that its rights in letters patent in the other countries set forth in said mortgage is of little or no value.

And your orator further shows that the said Edison United Phonograph Company now is and for a long time past has been indebted to your orator in the sum of Three thousand One hundred and Fifteen Dollars and Forty-three cents for goods, wares and merchandise sold and delivered by your orator to the said Edison United Phonograph Company, and your orator has annexed to this bill and makes it part thereof a statement of the items of the said account so due to your orator from the said Edison United Phonograph Company.

And your orator further shows that on or about the fifteenth day of March, Nineteen hundred and One, your orator commenced suit in the Circuit Court of the County of Essex against the said Edison United Phonograph Company for the said amount so due your orator as aforesaid; that according to the statement filed pursuant to law by the said Edison United Phonograph Company in the office of the Secretary of State of this State for the year Nineteen hundred and One, the principal office of the said Edison United Phonograph Company was located at 252 Main Street, in the City of Orange in this State; that the Sheriff of the County of Essex was unable to find any office of the said corporation at said place or any agent there upon whom process might be served; that after the commencement of the said suit the said corporation as your orator is informed, have established an office at Jersey City in the said State, and an appearance in the said suit has been entered by Messrs Carrick & Wortendyke, counsellors at law of this State.

And your orator further shows that said Edison United Phonograph Company is insolvent and has not sufficient funds to pay its just debts and that it has suspended its ordinary business for want of funds to carry on the same.

In tender consideration whereof, and for as much as your orator is remediless in and by the strict rules of law, and can find relief only in this Court, to the end.

1. That the said Edison United Phonograph Company may full, true and perfect answer make without oath to the premises

2. That the said Edison United Phonograph Company may be declared insolvent, and that a Receiver may be appointed according to the Statutes in such cases made and provided, to take charge of the assets of said corporation.

3. that your orator and the other creditors and the stockholders of the said corporation may be paid what is justly their due.

4. that the said corporation may be enjoined from exercising any of its franchises and from receiving any debts due to it, and from paying or transferring any of its moneys or effects and from continuing its said business, and

5. That your orator may have such further and other relief in the premises as the nature of the case may require and as may be agreeable to equity and good conscience.

May it please your Honor, the premises considered, to grant unto your orator, the State's Writ of Injunction, issuing out of and under the seal of this Honorable Court, directed to the said defendant, the Edison United Phonograph Company, its officers, servants and agents, enjoining and restraining each and every one of them from exercising any of the privileges or franchises granted by the act incorporating said corporation; and from ~~collecting or receiving any debts due to said corporation;~~ and from paying out, selling, assigning or transferring any of the assets, moneys, lands, tenements, or effects of said corporation; and also the State's Writ of Subpoena, likewise issuing out of and under the seal of this Honorable Court, to be directed to the said defendants therein and thereby commanding said corporation to appear be-

foremthis Honorable Court, at a certain day and under a certain penalty therein to be expressed, then and there to answer the premises, and to stand to, abide by and perform such decree in the premises as to your Honor shall seem meet and shall be agreeable to equity and good conscience.

And your orator will ever pray &c.

Howard W. Hayes

Solicitor for and of Counsel
with Compladnant.

[ATTACHMENT]

MONTHLY STATEMENT

Orange, N.J., March 11, 1901.

EDISON UNITED PHONOGRAPH COMPANY,

TO

EDISON PHONOGRAPH WORKS, DR.
Office and Works, Lakeside Avenue.

Telephone 305.

P.O.Box 1008.

1893			
Oct.2	To Mdse.	\$ 109.10	
" "	"	1116.40	
" 3	"	10.75	
" 6	"	32.02	
" 17	"	5.05	
Nov.2	"	2.85	
" 2	"	1.10	
" "	"	78.81	
" "	"	74.57	
" 11	"	1.80	
" 13	"	74.57	
Dec.5	"	471.15	
" 9	"	502.40	
1894			
Feb.5	"	207.12	
1895			
Oct.16	"	.57	
1896			
Mar.6	"	1.05	
" 25	"	3.58	
Apr.20	"	.72	
Oct.31	"	243.33	
1899			
July6	"	1115.10	
Aug.16	Interest	825.41	
Oct.23	To Mdse	508.80	
Nov.20	"	22.80	\$4409.05

[ATTACHMENT]

1893			
Nov. 30	By our credit	\$	37.67
1894			
June 13	By our credit		58.10
Nov. 6	By our credit		2.72
1895			
July 30	Your bill		7.95
Sept. 20	Our credit		.18
1896			
Sept. 30	Cash		125.
1899			
July 12	Cash	1062.	\$1993.62
			<u>\$3115.43</u>

[ATTACHMENT]

State of New Jersey:
 Ass
Essex County :

 WILLIAM E. GILMORE, being duly sworn
according to law on his oath says:

 I reside at Orange, in the State of New Jersey, I am the
General Manager of the Edison Phonograph Works, the complain-
ant in the foregoing Bill; I am familiar with the affairs of
the said complainant; the president of the Edison Phonograph
Works is Thomas A. Edison, who is at this time absent from the
State of New Jersey; I have read the foregoing bill of
complaint and the facts therein set forth are true to the
best of my knowledge and belief. The statement of the
account due from the Edison United Phonograph Company to the
Edison Phonograph works, annexed to the Bill is correct,
that amount is due and owing to the complainant and no part
of it has been paid.

Sworn to and subscribed :
before me this 1st day : William E. Gilmore.
of April, 1901 :

 A. Westes,
 Notary Public.

(L.S.)

[ATTACHMENT]

State of New York :
:ss
County of New York :

A. LEO EVERETT, being duly sworn deposes and says that he is over the age of twenty one and resides at 152 East 34th Street New York City, and is an attorney and counsellor at law practicing at 180 Broadway in the Borough of Manhattan City of New York.

That he has made inquiries into the circumstances and subject matter of a suit entitled National Bank of North America in New York, plaintiff, vs Edison United Phonograph Company and John E. Searles, defendant, pending in the Supreme Court of the State of New York in and for the County of New York. That said suit was commenced upon the 7th or 8th day of March, 1901 by the issuance of a writ of attachment in favor of the said plaintiff against the defendant Edison United Phonograph Company on the ground as stated in the affidavit upon which said writ was granted, that the said defendant Edison United Phonograph Company was a foreign corporation, namely a corporation organized and existing under the laws of the State of New Jersey. That the complainant sets forth that the defendant Edison United Phonograph Company executed on March 5th, 1900 its promissory note as follows.

\$20,000. N.Y. March 5, 1900.

Twelve months after date, if or value received, the Edison United Phonograph Company promises to pay to John E. Searles or order at office of the Guaranty Trust Company in the City of New York, thirty thousand dollars with interest from date until payment at the rate of six per cent per annum.

This note is one of ten notes of even date herewith, exactly similar in tenor and amount, made by the Edison United Phonograph Company and secured by trust mortgage dated March 5th, 1900, executed by said Company to the Guaranty Trust Com-

[ATTACHMENT]

pany, trustee. Signed, Edison United Phonograph Company by John E. Searles, President, E.N. Minson, Secretary (Endorsed J.E. Searles)

The complainant further alleges that said note came into the possession of the plaintiff, National Bank of North America in New York, and that the defendant Company has failed to pay the same on the due date thereof. Judgment is demanded for the amount of the note with interest and costs.

The Sheriff of the County of New York in whose hands the writ was placed in order to, lew upon property of the defendant company was instructed to serve copies of the attachment papers upon the Guaranty Trust Company of New York and upon the plaintiff on the presumption that these parties had property of the defendant in their possession.

That he has made investigation into the matter of a trustee mortgage executed by the Edison United Phonograph Company to the Guaranty Trust Company of the City of New York on March 5th, 1900, as security for certain notes executed by the Edison United Phonograph Company above referred to.

Deponent is informed by counsel for trustee under the trust mortgage and verily believes that the following is a fair synopsis of said trust mortgage and of the circumstances attending its execution.

The mortgage recites that the Edison United Phonograph Company owes each of ten persons \$30,000, aggregating \$300,000, for which it has given its notes at twelve months with interest at six per cent per annum.

This loan is to discharge the Company's indebtedness including its indebtedness to Stephen F. Moriarty.

Stephen F. Moriarty agrees to loan the Company out of the amount paid him \$50,000 on the Company's note payable in tw

[ATTACHMENT]

twelve months at six per cent. For the better securing of the \$300,000. and the \$50,000. the Company deposits 1720 six per cent preference shares of the par value of,-

£10 each

£17200.

5047 Ordinary Shares of the par value of £1 ea. £5047

Five per cent first mortgage debenture stock of the par value of

£27260, all being securities

of the Edison Bell Consolidated Phonograph Company, Limited, of London, England.

2nd. All the Company's interest in the Deutsche Edison Phonograph Gesellschaft, Limited, of Cologne, Germany, incorporated on or about October 30th, 1895.

3rd. All the company's right in the Compagnie Francaise du Phonographe Edison, and its shares, being 2500 shares of the par value of 100 francs, certificates for which are to be deposited with Morgan, Harjes & Co. of Paris, which duly endorsed are to be delivered to the Trustee and 2500 shares of the said company known as Founder's shares.

4th. All the right of the Company in a contract dated August 9th, 1889, between it and Bauer & Co. for the organization of a corporation in Austria, Hungary, including the sum of £5000 to be paid as in said contract provided.

5th. All the Company's right in the proceeds of sales of phonographs now stored in New York, amounting to about \$15,000

6th. All the Company's right in Letters patent for Phonographs, Graphophones, &c., owned by it from Norway, Sweden, Denmark, Portugal, Belgium, or any other country.

7th. All the Company's right in contracts now or hereafter made by it with the three companies as above mentioned.

8th. All the Company's assets whether herein enumerated or not, now owned or hereafter acquired, together with net income.

To secure, first, a note of \$50,000 to Stephen F. Moriarty and after the payment of it to secure equally the ten notes aggregating \$300,000.

[ATTACHMENT]

In case of failure to pay the notes or interest, or if proceedings shall be commenced for the appointment of a Receiver, or whereby the control of the ownership of the property may be affected or disturbed &c., the Trustee on receiving the notes and on request in writing of the holder of the notes secured shall declare the entire principal of the notes due and proceed to collect the same property conveyed, and the Trustee may take possession as attorney in fact of the first part, or as Trustee and may with or without the order of Court sell the property to the highest bidder at public auction on such notice and at such times and places as it may see fit or the Court may authorize, and upon such advertisement in New York, and adjourn the sale, and give good and sufficient instruments of transfer.

On the twenty ninth day of March, Nineteen Hundred and One a final judgment was entered in the said suit brought by the National Bank of North America, against the Edison United Phonograph Company, for the sum of Thirty one thousand three hundred and sixty nine 69/100 dollars, which judgment remains unsatisfied on the record of the said Court.

Sworn to and subscribed :
before me this 1st day of : A.hec Everett.
April, 1901, before me a :
Notary Public of the State :
of New York at New York. :

C.C.Helm,
Notary Public N.Y.Co.

(L.S.)

[ATTACHMENT]

State of New Jersey: :ss
Essex County :

HOWARD W. HAYES, being duly sworn according to law, on his oath says:

I am the attorney of the Edison Phonograph Works in the suit brought by it against the Edison United Phonograph Company, mentioned in the foregoing Bill. The summons was issued March 12th, 1901, and returnable March 21st, in order to instruct the Sheriff in regard to service I made inquiry in the office of the Secretary of State and learned that the last report filed by the defendant corporation stated its office to be No. 252 Main Street, Orange. I personally made inquiry at that place and found that the corporation had no office there. On March 19th, 1901, Mr. Carrick of Carrick & Wortendyke counsellors at Law of this State, called on me and informed me that he represented the defendant corporation and that if had established an office in Jersey City, and that he would enter an appearance for the defendants in the above mentioned suit. I understand that he has done so.

The President of the Edison United Phonograph Company appears from said report, to be John E. Searles, who is a resident of the State of New York; the vice-president is Stephen F. Moriarty who resides in London, England, and the Secretary is George M. Morison, who resides in the State of New York.

Sworn to before me and :
subscribed this 1st day of : Howard W. Hayes.
April A.D. 1901. :

Fred'k C. Fischer
Notary Public for New Jersey.

(L.S.)

[ATTACHMENT]

Annual Report for 1900

OF THE

Edison United

Phonograph Company

organized under the Laws of the State of
New Jersey.

Directors, Officers, &c.

Filed May 25 1900.

George Wurta

Secretary of State.

[ATTACHMENT]

Annual Report by a Domestic Corporation.

The Edison United Phonograph Company,
Organized and Registered under the Laws of the State of New Jersey.

The corporation above named, organized and registered under the Laws of the State of New Jersey, does hereby make the following report in compliance with the provisions of an act of the Legislature of New Jersey, entitled "An Act Concerning Corporations (Revision of 1896)," and the various acts amendatory thereof and supplemental thereto.

FIRST—The name of the corporation is Edison United Phonograph Company

SECOND—The location of the registered office is at No. 252 Main St., Orange Street,

and John T. Moriarty is the agent upon whom process may be served.

THIRD—The character of the business is Manufacturing and dealing in instruments for recording and reproducing sounds and sale of territorial rights.

FOURTH—The amount of the authorized capital stock is \$ 1,000,000. The amount actually issued and outstanding is \$ 1,000,000.

FIFTH—The names and addresses of all the Directors and Officers and the term when the office of each expires are as follows:

NAMES OF DIRECTORS.	ADDRESS.	EXPIRATION OF TERM.
John E. Searles	27 William St., New York.	March 4, 1901.
Stephen F. Moriarty	London, England.	March 4, 1901.
Thomas C. Platt,	49 Broadway, New York.	March 4, 1901.
William C. Lovering,	27 Williams St., New York.	March 4, 1901.
George N. Morison,	27 William St., New York	March 4, 1901.
Winthrop M. Tuttle,	27 William St., New York.	March 4, 1901.
George W. Oakley,	27 William St., New York.	March 4, 1901.
Frank Hart,	27 William St., New York.	March 4, 1901.
Edwin B. Hopkinson,	27 William St., New York.	March 4, 1901.
OFFICERS:		
President,	John E. Searles	
Vice President,	Stephen F. Moriarty	
and Vice President,		
Treasurer,	Winthrop M. Tuttle	
Secretary,	George N. Morison	

SIXTH—The next annual meeting of the stockholders for election of Directors is appointed to be held on March 4th, 1901.

SEVENTH—The name of the corporation has been at all times displayed at the entrance of its registered office in this State, and the corporation has kept at its registered office in this State a transfer-book, in which the transfers of stock are made, and a stock-book, containing the names and addresses of the stockholders and the number of shares held by them respectively, open at all times to the examination of the stockholders as required by law.

WITNESS our hands this 22d day of May A. D. 1900.

John E. Searles President.

G. N. Morison Secretary.

THOMAS A. EDISON, PRESIDENT.

JOHN F. RANDOLPH, Secy & Treas.

W. E. GILMORE, GENERAL MANAGER.

EDISON PHONOGRAPH WORKS

Orange, N.J.

June 17th, 1901.

Howard W. Hayes, Esq.,
Newark, N.J.

Dear Sir,

I return to you herewith your letter of June 12th, copy of the testimony in our case against the Edison United Phonograph Company, together with a memorandum from Mr. Edison setting out his recollection of the old deal made back in 1890.

Mr. Edison requests me to return all papers to you so that you can think over what he states in his memorandum, and then he will be glad to see you here any time during the week.

I am sending this to you by special messenger, so that it will get to you promptly, and then you had better telephone the Laboratory and make appointment to meet Mr. Edison.

I am going away Tuesday morning early and will not get back until Monday morning, June 24th, so you had better communicate direct with Mr. Edison, through Mr. Randolph.

Yours very truly,

W. E. Gilmore
General Manager.

WRG:JHC

Encs.

[ENCLOSURE]

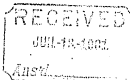
Cable Address
WORTLEY NEWARK.

LAW OFFICE
HOWARD W. HAYES,
Room 501-502, Federal Building,
265 Broad Street.

TELEPHONE No. 523.

NEWARK, N. J., June 12, 1901. 190

William E. Gilmore, Esq.,
National Phonograph Company,
Orange, N.J.



Dear Sir:-

I beg to hand you copy of testimony taken in the Edison United Phonograph Company case. The portion of interest is to Searles' testimony, which begins at page 11. I wish you would ask Mr. Edison to look this over and I would like to have a talk with him before the 21st, when the hearing is to be continued, so as to learn what facts he is personally familiar with in regard to the ownership of the stock of the Inter-National Graphophone Company. In the meantime, on account of the inadequate explanation by Mr. Searles of the use made of the dividend checks of the Edison Phonograph Works, I would advise you to send no further checks for dividends to the Inter-National Graphophone Company, until the matter is more fully ventilated.

I would also say that I have been personally requested by the counsel of Mr. Marquand, who is a stockholder in the Inter-National Graphophone Company, to request that this dividend check be not sent. On account of Marquand's age and ill health, his counsel does not wish him to be put in the position of being attacked by the Searles interest, and so asked me for the present not to connect his name with the matter. I will try, however, to get from his counsel a letter to the Works containing the same request.

I also learn that the schedule of Searles' assets assigned to his Trustee in bankruptcy includes 28,166 shares of the Inter-National Graphophone Company stock, and 2500 shares of the Edison United Phonograph

ENCLOSURE

[ENCLOSURE]

Case Address:
WORTLEY NEWARK,

Telephone No. 152.

LAW OFFICES
HOWARD W. HAYES,
Room 201-205, Federal Building,
725 BROAD STREET.

June 12, 1901.

NEWARK, N. J.,190

William E. Gilmore, Esq.

No. 2

Company stock. This last is held subject to an agreement with Stephen
F. Moriarity, dated June 10, 1897.

Yours very truly,

Howard W. Hayes

/ ENCLOSURE

[ENCLOSURE]

BOX No. 63

Legal Box 117
folder 5

Hayes -

1st In the early days of the Phonograph - I had a Contract with Goumand. whereby he & I owned all my phonograph patents outside of US & Canada -

2nd A Co called the International Graphophone Co had bought from the graphophone people all their patents & rights in foreign countries -

3rd ~~off~~ The International started a shop at Haiford Ct to make graphophones for export they having reserved all wfg rights -

4th after Ed Goumand worked awhile & the International the later parties broached Consolidation -

[ENCLOSURE]

5th = Finally a Consolidation was made and a Co formed called The Edison United Phonograph Co. This Co acquired all the rights belonging to the International Phonograph Co. + Edison (Lowne) interest.

6 = Ed. Co. took stock in payment.

7th The Phonograph Works were urged by the Consolidated Co to take over the Hartford Shop - They finally did so, ~~and~~ The Works increased their stock + ~~also~~ took over the shop, ^{+ phonographs of \$80,000 of which were 20,000} for which they allowed \$99,000 + rec'd \$47,000 Cash - for this they gave the United Co \$4,000 of phonograph stock =

[ENCLOSURE]

8 = After a ~~few~~ ^{short time} the Edison United wanted money to operate, Edison & Gouraud each loaned the United Co \$18,000 a year to help them along taking notes of the Co which were to be paid from the 1st Dividends -
I believe the International Grafine interest loaned an equal amount -

9 = Edison after a few years seeing that there was little prospect that the stock of the E United would ever have any value accepted an offer from Charles & Company for Edison's stock he had a wire nominal sum for the same - Gouraud I believe still holds his -

[ENCLOSURE]

10 = Now the question arises, if the
stockholders of the Edison United General
into taking stock of a Co which was
supposed to own Goeth, when in fact
according to Charles DeLaney
it never owned the International stock.

11 - Perhaps its a play upon words -
while the E United may never have
owned the stock actually. They owned
all the patents & assets represented
by the stock & must own them now -
therefore in reality they own the International
Co.

[ENCLOSURE]

12 = At the time the trade for Consolidation was made, the International got the Works Stock + I think if you can get the Control of Consolidation that the United Co. acquired all the assets of the International -

13 = The International was owned by 10 persons among them were, Jesse Seligman, D. O. Mills, H. H. Jewell's brother, Margaret Thos. Dalan Phila, the rest I don't remember - ~~my impression~~ I think came in ~~later~~ later,

I think he has manipulated the assets of the Co. so he personally owns them or some of them upon better get up some A.I. ammunition. ~~the~~ E

[ENCLOSURE]

14= Searles says in answer to your question Has the EUPG any interest direct or indirect, legal or equitable in any of the stock of the International Graphophone Co -

Answers none whatever, perhaps the Contract is so worded that they haven't but they certainly own the assets represented by the stock if not what did the E United get when they consolidated ~~the~~ Edison & International Co

S S

S

THOMAS A. EDISON, President.

JOHN F. RANDOLPH, Secy & Treas.

W. E. GILMORE, General Manager.

EDISON PHONOGRAPH WORKS

Orange, N.J. June 17th, 1901.

Howard W. Hayes, Esq.,
Newark, N.J.

My Dear Mr. Hayes,

I return you letter from H.G. Ward, of Robinson, Biddle & Ward, New York, dated June 14th. I did not show this to Mr. Edison; as you will no doubt see him sometime this week, I wish you would explain the circumstance to him, and then give him your opinion as to holding up the last payment of dividend to the International Graphophone Co.

Yours very truly,

W. E. Gilmore
General Manager.

WEG:JHC

[ENCLOSURE]

EDDICE & WARD, 200 CHESTNUT ST., PHILADELPHIA.

JOSEPH SILVERSTEIN WARD,
JAMES H. WARD,
JOSEPH H. WARD,
A. LEO WARD.

ROBINSON, SHIPLEY & WARD,
COUNSELLORS AT LAW AND PROCTORS IN GENERALTY.

TELEPHONE: 1174 GOETTLANDT.
CARE ADDRESS: TECHNOLOG.

100 BROADWAY, NEW YORK.

June 14, 1901.

Howard W. Hayes, Esq.,
765 Broad Street,
Newark, N. J.

My dear Hayes:

I thank you for yours of the 12th and
the copy of the testimony of John E. Searles.
Mr. Marquand's interest is too small to involve him
in this matter, considering his age and cares, so
that I would rather not write a letter in his name
to the Edison Phonograph Works.

Very truly yours,

H. Edward

*M. Edmundo
Please see the
name reference to me
H. E. W.*



IN CHANCERY OF NEW JERSEY.

Between
Edison United Phonograph Company,
Compl't
-and-
Edison Phonograph Works,
Def't.

BILL OF COMPLAINT.

Carrick & Wortendyke,
Sol'rs.

Filed July 29-1901.

(Copy)

CARRICK & WORTENDYKE
COUNSELORS AT LAW
COMMERCIAL TRUST BUILDING
JERSEY CITY N J

CHARLES L. CARRICK TELEPHONE 266
BYRON J. WORTENDYKE CARL CARDYKE

*Motion
86 & 87
New York*

IN CHANCERY OF NEW JERSEY.

To the Honorable William J. Magie, Chancellor of the State of New Jersey.

Humbly complaining shows unto your honor, your orator Edison United Phonograph Company, a corporation organized under the laws of the State of New Jersey.

1. That your orator, the complainant corporation, was organized on or about the twenty-fourth day of February, eighteen hundred and ninety, under the laws of this State, with an authorized capital stock of One million dollars, divided into ten thousand shares of the par value of one hundred dollars each. The purpose of said corporation was to exploit the introduction and use of phonographs, graphophones and speaking machines. On or about the eleventh day of March in the year of our Lord eighteen hundred and ninety, your orator purchased from Thomas Alva Edison, of Llewellyn Park, in this State, the entire right, title and interest of said Thomas Alva Edison in and to all his then existing letters patent, and applications for letters patent, with all extensions thereof, for an invention known as the "Phonograph", and all improvements thereon, in each and every country of the world, save and except the United States of America, and the Dominion of Canada; and on or about the same day your orator purchased from the International Graphophone Company, a corporation organized and existing under the laws of the State of New York, all the right title and interest of the said Company of in and to certain inventions relating to graphophones, phonographs, and speaking machines, granted in foreign countries to one Thomas Cochran, of the City of Philadelphia in the State of Pennsylvania, and which had theretofore been assigned by said Thomas Cochran, to the International Graphophone Company.
2. That on or about said eleventh day of March, eighteen

2.

hundred and ninety, for valuable consideration your orator entered into an agreement in writing with Edison Phonograph Works, a corporation organized under the laws of this State, and of which said Thomas Alva Edison then was, and still is, president, whereby your orator granted to the said Edison Phonograph Works the sole and exclusive right, in all parts of the world, including the United States and Dominion of Canada and all other countries, to manufacture for it, and upon its order, for its assigns, agents and licensees, but for no one else, all inventions and improvements appertaining to phonographs, graphophones, phonograph-graphophones, and speaking machines of every kind, and all supplies and appliances specially invented, or created, or to be used with phonographs, graphophones, or other speaking machines, more particularly described in the said contract or license agreement, a copy of which is hereto annexed and marked "Schedule A". The said Edison Phonograph Works in and by the said agreement or contract, covenanted and agreed that it would not manufacture any of the machines, supplies, or appliances which it was thereby licensed to manufacture, for anyone except for your orator, and upon its order, for its assigns, agents and licensees, and that, save and except as in said contract or agreement provided for, it would not manufacture any of the aforesaid machines, supplies, or appliances for sale or use in any part of the world, except in the United States and the Dominion of Canada, and that it would use its best endeavors, either by agreement, or by suitable marks or otherwise, to prevent any such machines, supplies or appliances which it should manufacture for sale or use in the United States or in Canada, from being sold or used elsewhere.

3. And your orator further shows that after the making of the agreements aforesaid, your orator carried on the busi-

3.

ness for which it was organized, and introduced the phonograph, graphophones and speaking machines which were manufactured under the patents referred to in the said agreements in various foreign countries of the world, excepting the Dominion of Canada, in some cases by licensing subsidiary companies to make sale of said phonographs, graphophones and speaking machines in specified limited territories, including a license to the Edison Bell Phonograph Corporation, Limited, (which was a corporation formed to operate in the United Kingdom of Great Britain and Ireland, and in the Isle of Mann, and in foreign countries, other than the continent of Europe) and also to the Edison-Bell Consolidated Phonograph Company, Limited, which was organized in or about the year eighteen hundred and ninety-eight, and which succeeded to all the rights of the Edison-Bell Phonograph Corporation, Limited; and your orator further proceeded, through the organization of subsidiary companies to introduce the said phonographs, graphophones and speaking machines, and the granting of licenses for limited territories to make and control a market therefor, and in so doing necessarily expended large sums of money and introduced and created a demand for such machines, and established business connections which were valuable and through which large profits would have been realized by your orator had the said contract under which your orator was operating, and under which the manufacture of the machines by the Edison Phonograph Works was being carried on, been adhered to and performed by said Edison Phonograph Works.

4. Your orator further shows that the said agreement for manufacture made by your orator with the Edison Phonograph Works on or about the eleventh day of March, eighteen hundred and ninety, contained a clause providing for the manufacture of said machines at a cost to your orator which was to be based

upon the actual cost of manufacture to be ascertained as therein stated increased by twenty per centum thereof; but in the actual operations of manufacture to fill your orator's orders and in the settlements made between your orator and the said Edison Phonograph Works, the price of the said machines and supplies was generally specially agreed upon, outside of the contract, but it was in all such cases provided that the special terms so made should not operate to abrogate or waive the said contract or any rights thereunder, the said special terms being a deviation from the terms of the contract made for such particular occasions only; that the exclusive right of sale of the phonographs, graphophones and speaking machines, covered by the said patents in the foreign countries in which an exclusive right had been granted to your orator, is a valuable franchise and privilege, and the said contract of manufacture with the Edison Phonograph Works, if carried out and faithfully adhered to by the Edison Phonograph Works, subject to the special contracts governing the price of said machines as above mentioned, would have enabled your orator to sell the said phonographs, graphophones and speaking machines in the territory controlled by it at a large profit; but your orator shows that the said Edison Phonograph Works at some time after the making of the said contract of the eleventh day of March, eighteen hundred and ninety, began to, and thereafter continued to manufacture and sell phonographs, graphophones and speaking machines and supplies and appliances therefor to persons other than your orator, without your orator's order, or consent, and in violation of the terms of said agreement, and to collect the proceeds of such sales and apply them to its own use and benefit, without notification to your orator, and without in any way accounting with your orator for the profits made by such sales in the said territory of which your orator

5.

rightfully had exclusive control. In many cases such sales were made by the Edison Phonograph Works, or its agents, to the subsidiary companies which had been organized by your orator for the purpose of introducing said phonographs, graphophones and speaking machines, and of marketing the same, at prices below the prices at which your orator could profitably sell to said customers, with the result that said customers and subsidiary companies declined to purchase phonographs, graphophones and speaking machines from your orator, and thereafter dealt and continue to deal with said Edison Phonograph Works and its agents, purchasing from said corporation directly or from its agents, without the consent of your orator. Between the nineteenth day of September, eighteen hundred and ninety-nine and the twenty-third day of February, nineteen hundred, the said Edison Phonograph Works sold directly to the Edison-Bell Consolidated Phonograph Company, Limited, of London England, which is a company which had been licensed by your orator to vend and sell phonographs, graphophones and speaking machines in the United Kingdom Of Great Britain and Ireland and elsewhere, as above set forth, to the amount of not less than seventy-nine hundred and seventy-nine dollars and twenty-six cents, and your orator believes that many other sales were made to the said Edison-Bell Consolidated Phonograph Company, Limited, and also to others in the territory of which your orator has of right the exclusive control and authority, in violation of the terms of the said contract of March eleven, eighteen hundred and ninety. Your orator has not knowledge sufficient to state with particularity and accuracy what sales have been so made and cannot so state until discovery shall have been made by said Edison Phonograph Works.

5. That on or about the twelfth day of March in the year of our Lord one thousand nine hundred and one, the said

Edison Phonograph Works began an action at law in the Essex County Circuit Court, for a balance of an account alleged to be due to said Edison Phonograph Works from your orator, and the bill of particulars annexed to the declaration on file in said cause shows that the said plaintiff claims a balance to be due from your orator of thirty-one hundred and fifteen dollars and forty-three cents. Of said balance sixteen hundred and eighty-seven dollars and forty-nine cents is made up of items which accrued more than six years before the plaintiff began his action, and which, moreover, your orator avers, were settled and discharged many years ago, and the remainder claimed to be due includes charges of thirteen hundred and thirty-four dollars and twenty-one cents for interest and expenses claimed to have been incurred upon a sale of merchandise which had never been delivered or tendered to your orator and for which your orator disclaims any liability. It is possible that there may be a small balance, not exceeding two hundred dollars, which upon the settlement of the account in said action at law may be justly due from your orator to said Edison Phonograph Works, but your orator claims that upon an accounting to be had between it and the said Works, under the terms of the said contract of the eleventh day of March, eighteen hundred and ninety, the said balance will not only be liquidated, but there will be a large balance due from said Edison Phonograph Works to your orator. Your orator has filed a plea of the general issue and the statute of limitations in the said action at law now pending in the Essex Circuit Court, but is unable to plead its defence by way of set-off until the amount justly due from the said Edison Phonograph Works to your orator shall have been ascertained and fixed by an accounting, which can be had only in this court.

6. Your orator further shows that it is ready and willing to indemnify the said Edison Phonograph Works for any judg-

ment which it may recover in said action at law, with interest and costs, by bond with security to be approved by this court, if said action at law shall be stayed until your orator shall be enabled to have an accounting in this court under the terms of the agreement of the eleventh day of March, eighteen hundred and ninety, in order that the balance so found to be due to your orator may be pleaded and set off in said action at law.

To the end, therefore, that the said defendant may, without oath, answer the promises specifically, paragraph by paragraph, as if the same were here repeated and it were particularly interrogated thereto, and that it may set forth and discover what sales of phonographs, graphophones, speaking machines, supplies and appliances covered by the patents held by your orator, have been made by it in territory other than the United States and the Dominion of Canada to persons other than your orator, or upon your orator's order, since the eleventh day of March, eighteen hundred and ninety, and the names of the persons to whom such sales were made, and the dates and the amounts thereof; and also that the said defendant may set forth and show the profit which was made by it upon each of said sales; and that an account may be taken of said sales, and of the profits made by the said defendant; and that it may be ordered and decreed to pay to your orator the profits so realized by it from the sales made in the territory aforesaid in violation of the said agreement of the eleventh day of March, nineteen hundred; and that said defendant, its officers, agents and servants may be restrained from selling to, or manufacturing for, any persons in the territory aforesaid, other than your orator and such persons as your orator may designate any phonographs, graphophones or speaking machines, or supplies or appliances therefor, covered by the patents held by your orator; and that the said defendant may be commanded and en-

joined to specifically perform the duties and covenants by it undertaken in said contract, and that the said defendant may be enjoined from further prosecuting its action at law now pending in the Essex County Circuit Court against your orator until the termination of this cause, upon your orator indemnifying said defendant with security to be approved by this court against any loss which it may or can sustain by reason of the delay in said action at law, your orator hereby tendering itself ready to give such security in an amount and with sureties to be approved by this court and for such other relief in the premises as the nature of the case may require and as shall be equitable and just and in accordance with the practice of this court.

May it please your Honor, the premises considered to grant unto your orator not only the State's writ of injunction, issuing out of and under the seal of this court, directed to the said Edison Phonograph Works, commanding and enjoining the said defendant, its officers, agents, and servants, to desist and refrain from selling to, or manufacturing for, any persons, other than your orator or such persons as may be designated by it, any phonographs, graphophones or speaking machines or supplies or appliances therefor, covered by the patents held by your orator, in any foreign territory, other than the Dominion of Canada, until the further order of this court; and also enjoining and restraining the said defendant, its officers, attorneys, servants and agents from further prosecuting the action at law now pending by said defendant against your orator in the Essex County Circuit Court, until a final decree shall be made in this cause, or until the further order of this court, but also the state's writ of subpoena, issuing out of and under the seal of this honorable court, to be directed to the said Edison Phonograph Works, commanding it on a certain

9.

day and under uncertain penalty therein to be expressed, to be and appear before your Honor, in this honorable court, then and there to answer the premises, and to stand to abide by and perform such order and decree therein as to your Honor shall seem meet, and as shall be agreeable to equity and good conscience.

Samuel M. Matusky,

Sol'rs for and of counsel with compl. t.

[ATTACHMENT]

STATE OF NEW JERSEY }
MIDDSOX COUNTY } SS:

George N. Merison, of full age, being duly sworn according to law upon his oath says that he is the Secretary of Edison United Phonograph Company, the complainant named in the foregoing bill of complaint, and has held that office since the organization of said company; that John K. Searles, who is the President of said complainant Company, is at present absent from the United States, having recently sailed for Europe; that deponent has read the foregoing bill of complaint and the statements of fact therein contained are true; that the statements of the bill of complaint as to the organization of the complainant Company, its purposes, and its acquisition of the rights under certain letters patent on the eleventh day of March, eighteen hundred and ninety, and the making of the contract, are true; that the statements of the operations of the said complainant Company, contained in paragraphs 3 and 4 of the bill of complaint, are true, and deponent believes that the allegations of the fourth paragraph of the bill of complaint as to the manufacture and sale by the defendant of phonographs and other materials, in violation of the terms of the agreement with complainant, are true; that reliable information as to the sales made by the defendant to the Edison Bell Consolidated Phonograph Company, Limited, the details of which are set out in said fourth paragraph of the bill of complaint, came to the knowledge of deponent, and of the complainant Company, for the first time, on a hearing before the Honorable John R. Emery, one of the Vice-Chancellors, in a cause pending in this Court, wherein the said Edison Phonograph Works was complainant and Edison United Phonograph Company was defendant, on the eighth day of April, nineteen hundred and one, when the counsel for the said Edison Phonograph Works admitted in open Court and

[ATTACHMENT]

in deponent's hearing that the sales in said paragraph particularly mentioned had been made by the defendant and claimed legal warrant for making same; that the facts set forth in paragraph 5 of said bill of complaint as to the pendency of the action at law in the Essex Circuit Court by said Edison Phonograph Works against the complainant, the nature of the claim upon which the action is founded and the defences thereto are true.

Subscribed and sworn to
before me at Jersey City
this 19th day of July,
A. D. 1901.

}
} J. N. Masoni.
}

Henry S. White
Notary in Chancery
of New Jersey.

IN CHANCERY OF NEW JERSEY.

B E T W E E N,
Edison United Phonograph Company, :
Complainant : ON BILL ETC.
and :
Edison Phonograph Works, :
Defendant. :

State of New Jersey:
Essex County :ss

THOMAS A. EDISON being duly sworn

on his oath says: I am the President of the Edison Phonograph Works, the above named defendant, and have general knowledge of its affairs. After the contract of March 11th, 1890, between the Edison United Phonograph Company and the Edison Phonograph Works was made, the Edison United Phonograph Company sold its patents for Great Britain to an English corporation called the Edison-Bell Phonograph Corporation, Limited, but claimed to have retained a certain interest in the business. About 1893 the Edison United Phonograph Company brought suit in this Court against the North American Phonograph Company, a New Jersey corporation, to restrain it from shipping phonographs to England, and made the Edison Phonograph Works a party defendant, alleging that the latter company had participated in these alleged acts of the North American Phonograph Company. While this case was pending the North American Phonograph Company went into the hands of a Receiver and was wound up. The Edison United Phonograph Company filed a claim with the Receiver for damages. The Edison Phonograph Works

IN CHANCERY OF NEW JERSEY.

BETWEEN,
Edison United Phonograph Company, Complt.

and

Edison Phonograph Works, Def't.

AFFIDAVIT FOR DEFENDANT

Howard W. Hayes,
Sol'r.

denied any participation in the alleged acts of the North American Phonograph Company and claimed that the Edison United Phonograph Company had parted with all its British rights by the sale of the patents. Other suits were at that time pending between the Edison United Phonograph Company and myself and corporations in which I was interested. A settlement of all the matters was arrived at and all the suits were dismissed and the Edison United Phonograph Company received a cash consideration. This settlement is expressed in a contract a copy of which is annexed to this affidavit. In accordance with the terms of this settlement the above mentioned suit brought by the Edison United Phonograph Company against the Edison Phonograph Works to enjoin it from selling phonographs in Great Britain was dismissed. I understood that this settlement disposed of any claim of the Edison United Phonograph Company that it could prevent the Edison Phonograph Works from manufacturing phonographs for the owners of the British patents. After this settlement the Edison United Phonograph Company assigned to the Edison-Bell Consolidated Phonograph Company, Limited, the successor of the Edison-Bell Phonograph Corporation, Limited, all its interest in the British phonograph patents and in the business in Great Britain, and the Edison Phonograph Works assigned to this New English corporation the right to manufacture for Great Britain, ~~xxxxxx~~ which it had theretofore retained. After these assignments the Edison Phonograph Works manufactured for, and sold to, the Edison Bell Consolidated Phonograph Company, Limited, between September nineteenth 1899 and February twenty-third 1900, phonographs and supplies to the amount

of seventy-nine hundred and seventy-nine Dollars and twenty six cents, as it had a right to do, but has never sold any other phonographs or supplies to any person or corporation in Great Britain. The Edison Phonograph Works is an entirely solvent corporation. It owns valuable real estate in West Orange and pays quarterly dividends to its stockholders out of its earnings. The Edison United Phonograph Company is reputed to be insolvent. It owes the Edison Phonograph Works over three thousand dollars and has other outstanding obligations to the amount of about three hundred and fifty thousand dollars. All its assets are covered by a mortgage to secure these obligations. A suit is now pending in this court to have it declared insolvent and a Receiver appointed to wind it up. If any decree should be rendered in this suit against the Edison Phonograph Works the amount would be paid at once, but if a judgment is recovered against the Edison United Phonograph Company it is doubtful if it could be collected, and any delay probably will make the chances of collecting it less.

Sworn to and subscribed :
this 10th day of October : THOS. A. EDISON
1901 at West Orange, before me :
:

A. Westes
Notary Public
Essex County New Jersey

(Seal)

AGREEMENT made this seventh day of April, 1898, between EDISON UNITED PHONOGRAPH COMPANY, INTERNATIONAL GRAPHOPHONE COMPANY, EDISON PHONOGRAPH WORKS and THOMAS A. EDISON.

WHEREAS, the following suits are pending in the New Jersey Court of Chancery and in the New Jersey Supreme Court the disposition of which is controlled by the parties hereto, to wit:-

Edison United Phonograph Company,	:	
Complainant,	:	Court of Chancery.
and	:	Docket 3, page 42B.
Edison Phonograph Works, and the North American Phonograph Company,	:	
Defendants.	:	
Thomas A. Edison,	:	
vs	:	New Jersey Supreme Court. On Contract.
Edison United Phonograph Company.	:	Docket 4, page 3.
International Graphophone Company,	:	
vs	:	New Jersey Supreme Court. In Tort.
Thomas A. Edison.	:	Docket 4, page 1.
George E. Gouraud and Thomas A. Edison,	:	
Complainants.	:	
and	:	Court of Chancery.
The Edison United Phonograph Company, Thomas Cochran, President, George N. Morrison, Secretary, and H. Henry Seligman, Treasurer, and the International Graphophone Company,	:	Docket 4, page 63.
Defendants.	:	

Thomas A. Edison and	:	
George E. Gouraud,	:	
and	:	
Complainants,	:	
	:	
Edison United Phonograph	:	
Co., Thomas Cochran, Thomas	:	Court of Chancery.
Dolan, Henry Seligman, D.	:	
Willis James, Henry G. Marquand,	:	Docket 4, page 64.
Dorlis C. Mills, Alfred O. Tate,	:	
and John E. Searles and The In-	:	
ternational Graphophone Company,	:	
Defendants.	:	
	:	
Edison United Phonograph	:	
Company,	:	
Complainant.	:	
	:	
and	:	Court of Chancery.
	:	
	:	Docket 4, page 191.
Thomas A. Edison and Edison	:	
Phonograph Works,	:	
Defendants.	:	
	:	

In consideration of the sum of One Dollar, paid by each party to the other, and the mutual agreements herein contained it is hereby agreed as follows:

1. The above-entitled suits now pending in the Chancery Court of New Jersey and in the Supreme Court of New Jersey shall be discontinued or dismissed without costs.

2. Thomas A. Edison, shall pay to the Edison United Phonograph Company the sum of Two Thousand Dollars (\$2000.) immediately upon the distribution of the assets in the hands of John R. Hardin as Receiver of the North American Phonograph Company.

3. The parties hereto shall themselves execute and deliver, and shall cause their solicitors in said suits to sign and present to said Courts, the necessary papers for carrying out the purpose of this agreement.

IV. Edison United Phonograph Company shall withdraw or release its claim filed with John R. Hardin as Receiver of the North American Phonograph Company, and shall consent to the dismissal, without costs to either party as against the other, of the appeal from the disallowance of said claim by said Receiver.

Signed, Sealed and delivered, the day and year first above written.

EDISON UNITED PHONOGRAPH COMPANY,
By Jno. E. Searles
President.

Attest:
G. N. Morison,
Secretary.
(L.S.)

INTERNATIONAL GRAPHOPHONE COMPANY
By Jno. E. Searles,
President.

Attest:
G. N. Morison,
Secretary.
(L.S.)

EDISON PHONOGRAPH WORKS,
By Thomas A. Edison,
President.

Attest:
J. F. Randolph,
Secretary.
(L.S.)

Witness to signature :
of Thomas A. Edison : Thomas A. Edison.

W. M. Mallory.

**Legal Department Records
Phonograph - Case Files**

Edison United Phonograph Company v. Thomas A. Edison et al.

This folder contains material pertaining to the suit brought by the Edison United Phonograph Co. against Edison, trading under the name of Edison Manufacturing Co., and the Edison Phonograph Works in the New Jersey Court of Chancery. The case was initiated in May 1895 and involved a dispute over foreign sales rights for phonographs. The item at issue was Edison's "kineto-phonograph"—a phonograph attached to a peephole kinoscope. The selected documents consist of the bill of complaint, an affidavit by Theodore Seligman for the complainant, and affidavits by Edison and Henry Morton for the defense.

IN CHANCERY OF NEW JERSEY.

Between

Edison United Phonograph
Company,

Complainant,

and

Thomas A. Edison, trading under
the name of Edison Manufacturing
Company, and Edison Phonograph
Works,
Defendants.

BILL OF COMPLAINT.

TO THE HONORABLE ALEXANDER T. MC.GILL,

CHANCELLOR OF THE STATE OF NEW JERSEY.

Humbly complaining shows unto your Honor, your orator the EDISON UNITED PHONOGRAPH COMPANY, a corporation organized under the laws of the State of New Jersey, that Thomas A. Edison was the inventor of what is generally known as the "Phonograph", which invention is more particularly described in Letters Patent of the United States, Number 200,521, dated February 19th, 1878, for an "Improvement in Phonographs or Speaking Machines," and upon and including which invention Letters Patent in many foreign countries have been granted to him, and he was, and remained until the time hereinafter mentioned, the sole and exclusive owner of such patents, patent rights and inventions in all such countries, and among others, in France, Great Britain and Germany.

And your orator further shows that by an instrument in writing, dated March 11th, 1890, the said Edison duly assigned, transferred and set over unto your orator all his right, title and interest in and to the said Letters Patent, except for the United States of America and the Dominion of Canada, but not including the right to use any of said inventions and improvements in or in connection with dolls, toys, toy figures and clocks.

And your orator further shows that by an agreement in writing, made between your orator and the defendant, the Edison Phonograph Works, executed simultaneously with the above mentioned agreement, and dated on the same day, your orator granted the said Edison Phonograph Works the sole and exclusive right in all parts of the world, including the United States and the Dominion of Canada and all other countries, to manufacture for it, and upon its order, for its assigns, agents and licensees, but for no one else, all inventions and improvements appertaining to phonographs, graphophones, phonograph-graphophones, and speaking machines of every kind, and all supplies and appliances especially invented or created to be used with them, described in or covered by the agreements and patents referred to, and the said Edison Phonograph Works thereby agreed that it would not manufacture any of the machines, supplies or appliances, which it was by said agreement licensed to manufacture, for anyone except for your orator, and, upon its order, for its assigns, agents and licensees, and that except as therein provided, it would not manufacture any of said machines, supplies or

appliances, for sale or use in any part of the world except in the United States and the Dominion of Canada; and that it would use its best endeavors, either by agreements or by suitable marks or otherwise, to prevent any such machines, supplies or appliances, which it should manufacture for sale or use in the United States or in Canada from being sold or used elsewhere. A printed copy whereof is offered as an Exhibit, marked "Exhibit A", and filed herewith.

And your orator further shows that it has had many phonographs manufactured by said Edison Phonograph Works for use abroad, and that a great number of said phonographs have been used by your orator, or its assigns, in foreign countries for purposes of exhibition for hire, and have received large revenues from such exhibitions.

And your orator further shows that in violation of said agreements, the said Edison and the said Edison Phonograph Works conspiring together have manufactured and shipped for use abroad a number of phonographs in connection with, and which were to be attached to, an instrument called a "Kinetoscope", this combined instrument being called a "Kinetophone", and the said Edison and the Edison Phonograph Works propose to ship abroad many other such phonographs, to be used in a similar manner. That on the second day of April, 1895, the said Edison and the said Edison Phonograph Works shipped at least one kinetophone to the Continental Commerce Company, of London, England, and as your orator is informed and believes, many other shipments of such kinetophones to various countries, and especially to France and Germany, have

been made, and will be made, in the immediate future.

And your orator further shows that by an instrument in writing, dated the thirtieth day of November, 1892, your orator assigned and transferred its patent rights under said inventions for the Kingdom of Great Britain and Ireland to a corporation organized under the laws of Great Britain for the purpose of acquiring the same, which corporation still is the owner of said rights, and your orator is the owner of one-third of the capital stock of said corporation. And further, by said instrument in writing, your orator, among other things, reserved to itself the prior rights to receive Twenty-three thousand (£23,000) pounds out of the net proceeds to be derived by such British corporation, from the sale or hire by it of the first fifteen hundred (1500) Automatic phonographs in the United Kingdom of Great Britain and Ireland.

And your orator further shows that a large business has already been created in said United Kingdom of Great Britain and Ireland, and that negotiations are pending for the sale of the above mentioned rights in the sale of automatic phonographs. That said shipment and said threatened shipments constitute a serious and grave injury to the rights of your orator, and that as a result of such shipments said negotiations would be broken off, and should further shipments of said phonographs and supplies for the same not be prohibited it will not only be impossible to obtain any return for its said rights, but also your orator's interest in said British Phonograph Company will become valueless. That

if said defendants continue to ship machines, as heretofore, to various foreign countries, exclusive of the Dominion of Canada, in contravention of your orator's rights herein, it will inflict an irreparable injury to and heavy damage upon your orator.

And your orator further shows that the said defendants, while not denying that they are manufacturing and shipping phonographs attached to and in connection with the kinetoscope, for the purpose of use in such foreign countries, insist that the phonographs which they are so manufacturing and shipping for use abroad are in fact manufactured and shipped for use in connection with a toy, within the meaning of the reservation contained in the above stated contract. But your orator charges and insists that the kinetoscope is not a toy within the meaning of such contract, or in any sense of the word, but is an instrument used for business purposes in giving or instruction amusement to the public for pay, and its use is in that respect entirely analogous to one of the principal uses of the phonograph, for which the right therein was conveyed to your orator; that at the time of the making of said contract, the use of the phonograph in connection with toys had a definite and well understood meaning, and referred simply to the use of small and inexpensive phonographs in connection with dolls or animals, or other small articles, for the amusement of children; and that one of the well understood uses of the phonographs at that time, which was not reserved, was the use of it in connection with exhibitions for the amusement of the pub-

lic or of individuals, and the use for this purpose has been one of the largest and most profitable uses to which it has been put; that the kinstoscope has been and is made and used for the same purpose, and a large business is being built up in the exhibiting of the kinstoscope either to individuals successively, through the automatic cabinet kinstoscope in public rooms where the same is on exhibition, or else in large halls, where the moving pictures are thrown upon a screen in the presence of a large number of persons; that the kinstoscope is an expensive and elaborate machine, and is advertised for sale at the sum of three hundred and fifty dollars, and it is publicly offered to persons who propose to exhibit it and to make money out of the exhibition of it, and a pamphlet publicly distributed, issued by the Kinstoscope Company, sole agents for the United States and Canada, showing the character and purpose of the kinstoscope, and the prices at which it is sold, is filed herewith and marked Exhibit .

And your orator also charges and insists that the kinstophone or kinstophonograph, which is the combination of the phonograph and the kinstoscope, is not a toy, but is also used for the purpose of public exhibitions for revenue, and has been referred to and described in ^a pamphlet issued under the direction of the defendant Thomas A. Edison, and with the approval of an autographic letter of his, printed in facsimile, describing the kinstophone, or kinstophonograph, as an important and valuable invention, and one which would be of great

Public interest and value, and the said pamphlet is filed herewith, and is entitled "History of the Kinetograph, Kinetoscope, and Kinetophone," by W. K. L. Dickson and Antonio Dickson, and purports to have been copyrighted by W. K. L. Dickson, in 1895, not only in the United States of America, but also in Great Britain, France, Belgium, Switzerland, Germany, Italy, Denmark and Portugal, and said pamphlet contains a portrait of said Thomas A. Edison and a facsimile of the autograph letter above referred to, and also illustrations showing the character and operation, as well as the results of the use of the kinetoscope, with a description of the kinetoscope and the kinetophone, and their uses and mode of operation; and that the greater part of the article published in this pamphlet was published in the Century Illustrated Monthly Magazine, in New York, for the month of June, 1894, together with a facsimile of the same autograph letter and reproductions of many of the same illustrations, with another portrait of said Thomas A. Edison, and in the said autograph letter attached to said pamphlet and to the said magazine article, Mr. Edison describes the idea of the kinetoscope and the kinetophone in the opening sentence, saying, "In the year 1887, the idea occurred to me that it was possible to devise an instrument which should do for the eye what the phonograph does for the ear, and that by a combination of the two all motion and sound could be recorded and reproduced simultaneously," and he also said "The following article, which gives an able and reliable account of the invention, has my entire endorsement. The authors are

peculiarly well qualified for their task from a literary standpoint and the exceptional opportunities which Mr. Dickson has had in the fruition of the work." And your orator refers to the said article both in the magazine and in the pamphlet for a description of the kinetoscope and the kinetophone, and for an account of the various important uses to which it was proposed to put these instruments, and for a comparison between the uses of them and the uses proposed and adopted for the phonograph.

And your orator further shows that from time to time various accounts of the kinetoscope and kinetophone have been published in the newspapers, many of these publications purporting to be, and no doubt being reports of interviews with Mr. Edison himself, and in these publications it clearly appears that the kinetoscope and the kinetophone were not regarded by Mr. Edison as toys, but as important instruments for public improvement and for commercial enterprise; and a scrap book containing clippings taken from the newspapers, as they appeared from time to time, is filed herewith and marked Exhibit .

And your orator charges and insists that it is plain from an examination of these articles in the pamphlet and in the magazine, and also from the clippings from the newspapers, and from an examination of the machines themselves, and from Mr. Edison's declarations with respect to them, that the phonograph used in connection with these instruments is not being used in connection with a toy, within the meaning of the reservation of the contract; and that in making and shipping the

kinetophone for use abroad, the defendants are doing so in violation of the rights of your orator under its contract.

Forasmuch as your orator can have no adequate relief, except in this Court, where such matters are properly cognizable and relievable, and to the end, therefore, that the defendants may make a full disclosure and discovery of all the matters aforesaid, according to the best and utmost of its knowledge, remembrance, information and belief, and full, true, direct and perfect answer make to all the matters hereinbefore stated and charged; but not under oath, an answer under oath being hereby expressly waived; and especially that they may discover and make known how many phonographs and phonograph supplies they have sold or shipped for use abroad, and to whom, and when and for what prices, and also that the defendants may be decreed severally to account for and pay over the income and profits thus unlawfully derived from the violation of your orator's rights, and may be restrained from making any shipment of phonographs and supplies for and parts of the same in connection with the kinoscope or otherwise, and from making any further shipments for sale or use in any foreign country, except the Dominion of Canada, directly or indirectly, and that upon the rendering of the decree above prayed, the damages your orator has sustained by reason of such violation of its rights, may be assessed or caused to be assessed, and that a provisional or preliminary injunction be issued restraining the said defendants from any further violation of your orator's rights pending this cause, and particularly from making the ship-

ment of phonographs, or supplies or appliances for the same, hereinbefore mentioned, and that your orator may have such other and further relief as the equity of the case may require, and to your Honor shall seem meet.

MAY IT PLEASE YOUR HONOR to grant unto your orator not only a writ of injunction conformable to the prayer of this bill, commanding the said defendants, their servants and agents wholly to desist and refrain from leasing, selling, delivery or shipping any phonographs or supplies for or parts of the same in connection with the Kinetoscope or in the form of the Kinetophone or Kinetophonograph, or otherwise, directly or indirectly, for sale or use in any part of the world except the United States and Canada, but also a writ of subpoena, directed to the said Thomas A. Edison, trading under the name of Edison Manufacturing Company and Edison Phonograph Works, commanding them and each of them on a certain day to appear and answer unto this bill of complaint, and to abide and perform such order and decree in the premises, as to the Court shall seem proper and is agreeable to equity and good conscience.

A. Q. Keasbey & Sons,

Solicitors

& of Counsel with Complt.

IN CHANCERY OF NEW JERSEY.

Between
Edison United Phonograph :
Company, :
Complainant :
and :
Thomas A. Edison, trading under :
the name of Edison Manufacturing :
Company, and Edison Phonograph :
Works, :
Defendants. :

STATE OF NEW YORK :
CITY AND COUNTY OF NEW YORK : SS:

THEODORE SELIGMAN, of full age, being duly sworn, on his oath, says that he is the General Counsel of the Edison United Phonograph Company, the complainant in this suit, and has had charge of its business since its organization; that he has read the above stated bill of complaint, and that the said bill is true to the best of his knowledge and belief; and in particular deponent says that said Thomas Alva Edison entered into a contract with the Edison United Phonograph Company, bearing date the 11th day of March, 1890, containing the provisions set forth in the bill of complaint, and that the printed copy, marked as an Exhibit, and filed with the bill, is a true copy of said agreement, the agreement itself being now in the possession of the agent of the com-

plainant in England, and of Mr. Edison himself.

That the complainant made a license agreement to and with the defendant, the Edison Phonograph Works, dated on the 11th day of March, 1890, containing the provisions set forth in the bill of complaint, and that the printed copy of said agreement, filed with the bill as an Exhibit, is a true copy of said agreement, the original being in the hands of the agent of the complainant in England, and in the possession of the Edison Phonograph Works, defendant herein.

That deponent, having learned that the defendant Edison Phonograph Works was manufacturing phonographs for the purpose of using them in connection with the kinetoscope in Europe, under the direction of Thomas A. Edison, and being satisfied that this was true, wrote the following letter to the defendants; on April 24th, 1895:

"We heroby serve you with notice of our objection to the sale either directly or indirectly of any phonographs or phonograph parts to Mr. Gladstone or McGuire & Bancus, as we are informed that they are engaged in shipping the same to Europe.

We have also received information that you propose shipping a number of kinetophones, and we object to such shipment as far as the phonographic portion of this instrument is concerned.

You have no right to manufacture or ship phonographs except by order of the Receiver and ourselves. The Receiver is not interested in the kinetophone, and such shipment would only be for use in our territory. We beg to remind you that

the restraining order affecting the shipment of phonographs or graphophones either directly or indirectly to foreign countries is still in force, the disobedience of which would be contempt of court, and if we find that you have made such shipment, in spite of our warning and objection, we shall do our utmost to have the court inflict the fullest penalty upon you for such contempt."

Whereupon Richard M. Dyer, as Counsel of the said Edison and the said Edison Phonograph Works, stated to deponent that the defendant Edison claimed that the kinetoscope was a toy, within the meaning of the above mentioned contract of March 11th, 1890, and that the said Edison proposed to continue shipping kinetophones, and thereupon wrote the following letter to deponent, on May 15th, 1895:

"With regard to the shipments of kinetophones abroad, I beg to inform you that one of such instruments was shipped April 2, 1895, to the Continental Commerce Co., of London, England. This was the first shipment, as I understand it, and will enable you to commence your proceedings. You can allege such a shipment and the fact will be admitted."

Your deponent further says that the kinetoscope is an invention, which consists of a machine or appliance for the taking of a series of instantaneous photographs of moving objects, and another machine wherein said photographs are mounted and rapidly revolved, so as to reproduce the appearance of moving objects. That the kinetophone is designed to combine this result with the result of the phonograph, by operating this machine synchronously with the phonograph,

so that the phonograph shall record the sounds which accompany the appearance of the moving objects, and shall reproduce the sounds in connection with the reproduction of the appearance of the objects; so that by means of the combined machines, constituting the kinetophone, there can be preserved and reproduced any event to which the combined instrument has been directed.

Your deponent further says that it is true that although the complainant has assigned its patent rights under said inventions for the Kingdom of Great Britain and Ireland to a corporation there organized, and that said corporation is still the owner of said rights, the complainant is the owner of one-third of the capital stock of said corporation, and in the instrument of transfer, reserved to itself the prior rights to receive £23,000 out of the net proceeds to be derived by such British corporation, from the sale or hire by it of the first 1500 automatic phonographs in said United Kingdom, and that a large business has been created in said Kingdom, and that negotiations for the sale of the above mentioned rights are pending with respect to automatic phonographs, as stated in the bill, and that it is true that the shipment by the defendants of phonographs for use in the United Kingdom of Great Britain, and other foreign countries, and the danger of future shipments, constitute a serious and grave injury to the rights of the complainant, not only as a stockholder in the English Company, but also as owner of the prior rights reserved in the automatic phonograph, and as the owner of phonographic rights, patents and business in

all parts of the world outside of the United States and Canada and that there is great danger that as a result of such shipments, the negotiations above referred to will be broken off, and that if phonographs and supplies can be shipped from this country by the defendants or others, it will be impossible for the complainant to obtain proper value for its patents and patent rights, or to make sales of phonographs, or to lease phonographs at their proper value, or obtain any adequate rental for its rights in said invention in such foreign countries; and this deponent further says that it is true that the said defendants do not deny that they are manufacturing and shipping phonographs to the United Kingdom of Great Britain and Ireland, and other foreign countries.

Sworn to before me this :
31st day of May, 1895, : Theodore Seligman.

Witness my hand and official seal,

(L.S.)

Charles Taylor,

Commissioner for New Jersey,

At New York City, New York.

In Chancery of New Jersey

Between

Edison United Phonograph Company
Complainant

and

Thomas A. Edison, trading under
the name of EDISON MANUFACTURING
COMPANY, and EDISON PHONOGRAPH
WORKS

Defendants.

AFFIDAVIT OF MR. EDISON.

State of New Jersey :

County of Essex : ss. Thomas A. Edison, being duly sworn,
deposes and says as follows:

I have read the bill of complaint
in this case and the affidavits of Theodore Seligman, Charles
L. Marshal and George N. Morison.

In 1888 the North American Phonograph Company was organized
ed to handle the phonograph business in the United States and
Canada, and in 1890 the Edison United Phonograph Company was
organized to handle that business for all other countries.
The belief was that the great field of usefulness for the pho-
nograph and that which warranted the large capital of these
companies was the employment of the phonograph in business
houses, by professional men, authors and others for dictation
purposes, to take the place of stenographers and furnish ^a cheap
and ever ready apparatus for recording and reproducing dicta-

tion. This was the commercial use of the phonograph, and to developing that use the efforts of the two companies referred to were entirely directed. The use of the phonograph for amusement purposes was considered of little or no value by the promoters of those companies and has always been discouraged by the companies themselves. It was thought to be a use based upon the novelty of the phonograph which would soon pass away, and would be a business too trivial in importance to warrant the serious attention of business men.

In my contract with the Edison United Phonograph Company I reserved the amusement feature of the business. It is perhaps true that that broad idea was not aptly expressed in view of the subsequent development of the business, but our views at that time were that the phonograph would be used for amusement purposes in connection with figures, either pictorial or tangible, and would furnish the words or music, or both, which would properly accompany the figures, and consequently in reserving the use of my inventions and improvements in or in connection with "toy figures" I considered that the ground was adequately covered.

The words "dolls", "toys", "toy figures" and "clocks" all had an independent significance. For clocks, it was always my intention, and had been so stated long prior to the contract in question in various publications, to use the reproducing elements of the full-size phonograph to call out the hours in place of or in conjunction with the ordinary striking of the hours, or to play a tune as the clock strikes, thus replacing the "chimes", or to both call out the hours and play a tune.

The use of the inventions "in or in connection with" dolls is a clearly expressed reservation, covering a doll figure which may enclose the reproducing phonograph directly within itself or the reproducing phonograph may be located in a base upon which the figure is placed, in a doll house in which dolls are arranged, or in numerous other ways.

The reservation of the use of the inventions "in or in connection with" toys was intended to cover a much wider ground. Under this reservation, the reproducing phonograph might itself be made of small size and used as a toy music box or toy-speaker without putting it in relation with other parts, *i. e.*, it might be made as a toy itself, or it could be used either full-size or in miniature in connection with the numerous kinds of toys known at the date of the contract or subsequently produced, and including the multitude of "automatic" or moving toys, some cheap and others costly, the manufacture of which forms a large industry in some parts of Europe.

The reservation of the use of the phonograph in or in connection with "toy figures" was intended to have a still wider significance. The word "toy" was used in the sense of "imitation" or "artificial", as distinguished from "natural". The reservation was intended to cover the use of the phonograph for amusement purposes in or in connection with figures, whether tangible or only pictorial, and of all sizes. My ideas on this subject of a date long prior to the contract under discussion in this case, covered many forms of figures. One plan I had, was a figure representing the leader of an orchestra swinging his baton and mounted upon a box or base in which the reproducing phonograph is located. The phonograph

and baton being connected together or timed to work in unison. Another plan was a full-size or part size speaking or singing figure with the phonograph located within it or in the base on which the figure stands. Such a figure was to have the jaws and lips move so as to produce a natural effect. I made many experiments looking towards accomplishing this result, by connecting the jaws and lips with a recording point so that as the record of the voice was made on one cylinder, the movement of the jaws and lips would be recorded on another cylinder, and from this latter record the jaws and lips of the figure were to be operated by a suitable mechanical connection. I could mention many ideas I had in this and similar directions, and I have made many experiments to carry them out.

It will be understood that in all these reserved uses, only the reproducing elements of the phonograph are employed. The complete or commercial phonograph has also recording devices, and is designed both to record and reproduce sounds.

In the development of the phonograph business, and within the last two or three years, the use of the phonograph for exhibition purposes has become of importance. For this purpose an ordinary phonograph is provided with a musical or speaking record and a small fee is charged to each person who listens to it, or the phonograph is mounted in connection with a coin-actuated attachment for starting its motor. The latter is known as the "automatic" or "nickel-in-the-slot" phonograph. Although this is a use of the reproducing phonograph which I consider within the spirit of the reservation of my contract with the Edison United Phonograph Company, yet the instrument being used alone and not in connection with any "figure", I have never questioned the right of that company to this use.

The Kinetophone which the complainant seeks to enjoin me from shipping to foreign countries, is the "kinetoscope" with a few parts of the phonograph attached to it so as to enable music to be given accompanying the miniature dancing figures or other movement which the kinetoscope displays. The phonographic attachment is only a fragment of a complete or commercial phonograph, without motor of its own but driven by the motor of the kinetoscope, and having none of the recording devices of the phonograph; it is capable of no other use except to accompany the figures of the kinetoscope. The kinetoscope itself is a mere toy and has always been so considered by me, and by many others, as will appear from the numerous accounts of the device which have appeared in the newspapers. I attach hereto a few of the hundreds of clippings in my possession showing this fact.

The "kinetograph", which is an instrument by which photographs of moving objects can be taken in rapid succession, is a somewhat complicated and delicate apparatus and requires an expert to handle it. That instrument I do not consider a toy. It embodies whatever there is of merit in the entire subject and is a highly useful apparatus.

The kinetoscope, however, is only an improved and perfected zoetrope for displaying the kinetographic pictures. The strips upon which the pictures appear carry a series of photographs of a moving object, each photograph being only three-quarters of an inch long. The kinetoscope moves one of these strips rapidly past the eyepiece of the instrument so that the pictures blend one into the other and produce the impression of continuous motion. This is just what is done in a crude way by the zoetrope. The principal differences between the two, are that the zoetrope is moved by hand, while the kinetoscope has a motor for giving uniform motion, and the pictures in the kinetoscope are more numerous and hence produce a more perfect effect. But these differences are all within the principle of the zoetrope and are such as would naturally be recognized as required to make a good zoetrope. The zoetrope has always been considered a toy. I attach hereto a copy of the description of the zoetrope and of some toys of other names employing the same principle, taken from Knight

Mechanical Dictionary. The sameness of the kinetoscope and zoetrope has been remarked by the newspaper writers, as will appear by the clippings already referred to. The kinetoscope is no larger than the zoetrope, the pictures of the former being actually smaller than usually employed in the latter.

For the reasons I have given, I have always considered the kinetophone to be within the reservation of my contract with the Edison United Phonograph Company. The kineto-

scope, in connection with which some parts of the phonograph are used to constitute the kinetophone, is a "toy" and is also an instrument for displaying "toy figures" and comes within the field of amusement which I reserved both by the spirit and the letter of the contract.

The statement made in the moving papers that the complainant expects to secure a ^{considerable} ~~liberal~~ amount of money from the sale of automatic phonographs in England by the English Company which owns the rights for that company, and that the sale of kinetophones in England will interfere with that business, I consider disingenuous and misleading. In the first place, the two instruments are not competing instruments, and the sale of kinetophones induces the sale of phonographs rather than prevent it. In the second place, neither the complainant nor the English Company referred to has made any effort to exploit the phonograph for amusement purposes.

Since the date of my contract with the complainant, the complainant has only ordered from the Edison Phonograph Works, fifteen hundred phonographs, and these I am informed and believe have practically all been taken by the English Company. This total number of phonographs was ordered by two orders, the first order being for one thousand and the second order for five hundred machines. These orders were filled in the year 1893 and in the spring of the present year respectively. The first order included two hundred and fifty reproducing phonographs designed for exhibition or amusement purposes, one hundred automatic phonographs for the same purposes and six hundred and fifty commercial phonographs.

Subsequently the English Company ordered from the Edison Phonograph Works the necessary parts to change one hundred of the two hundred and fifty amusement phonographs into machines which would record as well as reproduce.

What became of the one hundred automatic phonographs I do not know, but I have never heard that they were put into use. I have reason to believe they have not been, because the complainant and the English Company have always refused to sell their phonographs although I have repeatedly urged them that that is the proper way to carry on the business, and it has never been possible to carry on the exhibition business by renting machines.

The second order before referred to was, for five hundred commercial machines. Neither the complainant nor the English Company has ordered a single automatic phonograph since the order filled in 1893 for one hundred of such machines. If these Companies had made any proper effort to introduce these automatic phonographs, they could undoubtedly have disposed of several thousand machines. Consequently I consider the reference to automatic phonographs in the moving papers, and the assertion that the sale of kinetophones in England will interfere with the sale of automatic phonographs by the English Company, as disingenuous and misleading.

Another statement of a similar character in the moving papers and made in the same connection, is that at the date of my contract with the complainant, one of the principal uses of the phonograph was for exhibition purposes. The fact is that that use of the phonograph amounted to little or

nothing in March 1890, and has been entirely developed since.

All the rights of the Edison United Phonograph Company in the contract with me so far as it relates to England and all its rights in my English patents, including the manufacturing rights under whose patents formerly held by the Edison Phonograph Works, have been sold and assigned to the English Company. The Edison United Phonograph Company is only a stockholder in that Company. Besides this, it is my belief, based upon facts I have already stated, that the plan of the complainant and the English Company to market automatic phonographs in England has ^{since} long been abandoned. I do not see, therefore, what right the Edison United Phonograph Company has to obtain an injunction against shipping phonographs in any form into England.

Further than this, the sale of kinetophones in England cannot interfere with the business of the English Company.

That Company is not in the business of supplying such instruments itself and is not in position to supply the demand for them.

In closing this affidavit, I wish to state that I consider that the complainant has not ^{equitably} dealt with the Edison Phonograph Works---and myself in the handling of the foreign phonograph business. That company has always refused to sell phonographs and instead of actively promoting a commercial business as contemplated by the contracts has devoted itself to efforts to sell territorial rights. The result has been that the foreign business has amounted to very little.

Besides this the failure to sell machines and properly exploit the business has resulted in the forfeiture of many of my patents in foreign countries. Some of the French patents have recently been decided by the French Court to have been so forfeited. The course which the complainant has pursued has not only resulted in the failure to make profits out of the enterprise, but has greatly reduced the value of the property, which I turned over to the complainant for an interest in its capital stock. Besides, this, I have carried on the Edison Phonograph Works at a considerable loss, in expectation of a large foreign business which I was led to believe would be secured from the representations of the promoters and managers of the complainant. At the present time the phonograph business of the whole world outside of the United States and Canada is locked up and practically unused by the complainant.

This has not only resulted in serious loss but also in considerable embarrassment to the Edison Phonograph Works, because merchants in foreign countries seeing a demand for phonographs which the complainant refuses to supply, purchase phonographs through dealers in this country; and the complainant erroneously claiming that the Edison Phonograph Works has conspired with others to produce this result and has pursued the Edison Phonograph Works with harrassing and expensive litigation.

Subscribed and sworn to : Thomas A. Edison
before me this 17th day of :
June 1896. :

Rich. N. Dyer

Notary Public

(SEAL) State of New Jersey

United States of America :

State of New Jersey :

County of Essex : I, HOWARD W. HAYES a Notary Public in and for the State of New

Jersey do hereby certify that the foregoing is a true copy of an affidavit made by Thomas A. Edison and now on file in the office of the Clerk of the Court of Chancery of the State of New Jersey.

Witness my hand and official seal this twenty first day of June Eighteen hundred and ninety five at the City of Newark in the County and State aforesaid.

(Seal)

Howard W. Hayes
Notary Public of
New Jersey.

IN CHANCERY OF NEW JERSEY.

Between:

EDISON UNITED PHONOGRAPH COMPANY)
Complainant,)
-and-)
THOMAS A. EDISON, trading under the)
name of Edison Manufacturing Com-)
pany, and EDISON PHONOGRAPH WORKS,)
Defendants.)

AFFIDAVIT OF FR. MORTON.

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State of New Jersey)
County of Hudson.) ss:-

HENRY MORTON, being duly sworn, deposes and says as follows:

I am president of the Stevens Institute of Technology, located at Hoboken, New Jersey.

I am asked to give my opinion as to the character of the kinetoscope, and as to whether the instrument is to be regarded as a toy or an apparatus for displaying toy figures. In this regard, it appears to me to come within a class of apparatus with which I have been for thirty years or more very well acquainted; namely, the class of apparatus first known as the thaumatrope, and later, under various modifications, described as the anorthoscope, phenakistoscope, stroboscope, rotascope, zoetrope, etc. I recollect very well, even as a child, seeing certain forms of this apparatus, and about thirty years ago had occasion to examine a very large collection, containing every variety of such apparatus produced up to that date, this collection having been made by Mr. Banker, of Philadelphia, who had collected great quantities of

philosophical toys, as well as of philosophical instruments, and a portion of whose collection of the latter sort I purchased for the cabinet of the Stevens Institute in 1870. From that time on I have from time to time examined and experimented with such apparatus, having used certain varieties of it for purposes of illustration in connection with some of my own public lectures on light and vision, but such structures I have always regarded as essentially toys, whose main purpose was amusement, although, of course, they served to illustrate certain properties of vision and of light. The kinetoscope is, I think, manifestly simply the latest improvement or development of this sort of structure, that is, a means of giving to the eye, by the use of pictures, the impression of living or moving objects. As to the effect produced, there is nothing substantially new or different in this instrument, as compared with the older ones, except a greater perfection, due to the greater number of slightly different pictures, which, in rapid succession, are brought into view. And as to the means by which this better result is secured, there is also nothing new in a radical or substantial way, but only such improvements and refinement in the method of applying the general principle as would naturally suggest themselves to an ingenious constructor who wished to improve upon this amusing and curious toy.

It is thus, as I said at first, in my opinion clearly and manifestly a toy, and I have always so regarded it and so described it. It also is very correctly defined or described as an apparatus used for displaying toy figures; or, in other words, the figures which this apparatus shows or displays are manifestly toy figures, that is, they convey the impression to those looking at them, of toy-like figures, or as being toy figures. Indeed, I do not know any paraphrase that can

be regarded as clearer than this expression "toy figures" itself to convey clearly to the mind the same impression which one receives on looking through this apparatus.

Subscribed and sworn to before me
this 18th day of June, 1895.

Henry Morton



A. Kuesenberger
Notary Public

**Legal Department Records
Phonograph - Case Files**

José Elizondo et al. v. Jorge Alcalde

This folder contains material pertaining to the suit brought by José F. Elizondo, Luis G. Jorda, and Rafael Medina against Jorge A. Alcalde in Mexico. The case was initiated in 1906 and involved alleged copyright violations by Alcalde, an agent of the Mexican National Phonograph Co. The selected items consist of letters concerning the case, along with correspondence between attorneys representing the National Phonograph Co., the Victor Talking Machine Co. and the Columbia Phonograph Co. regarding musical copyright in Mexico. Also selected is a copy of the court decision in a related case involving Elizondo and S. V. Schmill, an agent of the Victor Talking Machine Co. in Mexico. Related material can be found in the archival record group, National Phonograph Company Records.

Orange, N. J. Feb. 1, 1906.

Jorge A. Alcalde, Esq.

San José El Real No. 10.

Mexico City, Mexico.

My dear sir:-

Your letter of the 20th ult. to Mr. Walter Stevens, Manager of the Foreign Department of the National Phonograph Company, has been referred to me.

I note that suit has been brought against you on behalf of certain Mexican authors, alleging infringement of their copyrights by the reproduction of fragments of their works on our records. I suggest that you immediately consult my correspondent in Mexico, Mr. Y. Sepulveda, Mortgage Bank Building, who is entirely familiar with the law regarding patents and copyrights in your country. Personally, I have no knowledge of the Artistic and Literary Property Law, to which you refer in your letter and do not know to what extent intellectual property is protected in Mexico. Assuming, however, that the law in the United States on this point and that the decisions of our Courts based thereon may have some weight with the Mexican Courts in a decision of this question, the following expression of my views may have some value.

Copyrights in the United States are recognized by statute and not by the common law. Section 4952 of the Revised Statutes provides that:-

"The author..... of any.....
dramatic or musical composition.....
shall.....have the sole liberty of
printing, re-printing, publishing, com-
pleting, copying, executing, finishing
and vending the same."

In the case of Kennedy et al vs. McTammany, (33 Federal Reporter page 584) the question was considered whether the making of perforated sheets of

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paper for use in organettes to reproduce copyrighted music was an infringement of the registered copyright. The case was decided by Judge Colt in the United States Circuit Court for the District of Massachusetts, who said:-

"Copyright is the exclusive right of the owner to multiply and to dispose of copies of an intellectual production. I cannot convince myself that these perforated strips of paper are copies of sheet music, within the meaning of the copyright law. They are not made to be addressed to the eye, as sheet music, but they form part of a machine. They are not designed to be used for such purposes as sheet music, nor do they in any sense occupy the same field as sheet music. They are a mechanical invention made for the sole purpose of performing tunes mechanically upon a musical instrument. The bill itself states that they are adapted and intended for a use wholly different from any use possible to be made of the ordinary sheet music. Their use resembles more nearly a barrel of a hand-organ or music box.....I find no decided cases which directly or by analogy support the position of the plaintiffs, and it seems to me that both upon reason and authority they have failed to show any infringement of their copyright, and that therefore the bill should be dismissed."

A similar question was recently considered in the case of the White-Smith Music Publishing Company vs. Apollo Company (139 Federal Reporter, page 427) by Judge Hazel in the United States Circuit Court for the Southern District of New York. In this case, the perforated sheets of music were adapted to be used in connection with mechanical piano players. The Court said:-

"Are the perforated music sheets or rolls which are designed to mechanically represent or reproduce the copyrighted musical composition, copies thereof, within the meaning and intent of the statute? What did Congress intend by the words 'musical composition'? These questions, though not entirely new, are interesting and important. The words

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'musical composition' undoubtedly relate to the intellectual conception of the composer; but manifestly a careful reading of the copyright law in connection with the authorities construing the act, indicates that protection only of the material/ semblance in which the musical composition finds expression is afforded.....The musical composition, as an idea in the concrete, is not copyrightable as such. That which gives the conception corporeal and tangible existence is the subject of copyrighting. To hold otherwise, indeed, would be a wide departure from the obvious intention of Congress in extending to the author, inventor, designer, proprietor, etc., the protection secured by statute. "''''''The words of the statute have reference to the tangible object that appeals to the sense of sight, and that which is susceptible of being reproduced by printing, copying, publishing, etc."''''''''''''''''''''I am of opinion that the reference to musical compositions as employed in Section 4952 is restricted to writing, as that word is defined in the Sarony Case."

The Sarony case referred to by Judge Hazel was decided by the United States Supreme Court, the case being entitled "Lithographic Company vs. Sarony", and the opinion appears in Volume 141, United States Supreme Court Reports, page 53. The Supreme Court, in construing the word "writings" as employed in our Constitution, held that it includes "all forms of writing, printing, engraving, etching, etc., by which the ideas in the mind of the author are given visible expression."

The only case that I am familiar with where the question of infringement of copyrights by phonograph records was considered, is that of Stern et.al vs. Rosey, decided by the Court of Appeals in the District of Columbia and published in Volume 17 of the Reports of that Court, page 562. In that case it was urged by the complainants that two of their copyrights were infringed by the sale of duplicate phonograph records, containing the words and music of the copyrighted songs. The Court said:-

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"The contention hereunder is that the reproduction of the music and words of appellants' publications, in the manner and for the purposes described in the bill is the act of publishing or copying the same within the meaning of the aforesaid act. This contention we are also constrained to deny. We cannot regard the reproduction through the agency of the phonograph, of the sounds of musical instruments playing the music composed and published by the appellants, as the copy or publication of the same within the meaning of the act. The ordinary signification of the words 'copying', 'publishing' etc. cannot be stretched to include it. It is not intended that the marks upon the waxed cylinders can be made out by the eye or that they can be utilized in any other way than as parts of the mechanism of the phonograph. Conveying no meaning then, to the eye of even an expert musician, and wholly incapable of use save in and as part of a machine, specially adapted to make them give up the records which they contain, these prepared wax cylinders can neither substitute the copyrighted sheets of music, nor serve any purpose which is within their scope. In these respects there would seem to be no substantial difference between them and the metal cylinders of the old and familiar music box; and this, though in use at and before the passage of the Copyright Act, has never been regarded as infringing upon the copyrights of authors and publishers. This peculiar use in either music box or phonograph, instead of copying the music in the sense of the copyright act to the injury of the publisher would rather seem analogous to that of one, who having purchased the sheet music of the publisher, proceeds to perform it continuously in public for his own profit."

In view of the decisions to which I have called your attention, I entertain no doubt at all but that in the United States, a phonograph record cannot possibly be considered an infringement of a copyright. You will see, however, that the decisions are all based upon the proposition that a phonograph record is not to be regarded as a "copy" within the meaning of the law, and the law itself is based upon that provision of our Constitution giving Congress the power "to promote the progress of science and useful arts by securing for limi-

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ted time to authors and inventors, the exclusive right to their respective writings and discoveries."

Of course, it is very probable that the law on this subject in Mexico may be more liberal in its recognition of the rights of authors than in this country, and if this is so, the decisions to which I have called your attention, would have little or no weight. If, after you have seen Mr. Sepulveda, he regards it as important that certified copies of the foregoing decisions should be obtained, please wire me, and I will secure the same, having them properly certified for use in your country. In the meantime, kindly keep me fully informed of the situation.

Yours very truly.

FLD/ARK



THE MEXICAN NATIONAL PHONOGRAPH CO.
 EDISON MANUFACTURING CO.
 BATES MANUFACTURING CO.

ORANGE, N. J., U. S. A.

FONOGRAFOS Y FONOGRAMAS
 EDISON.
 KINETOGRAFOS DE PROYECCION
 Y PELICULAS
 ORIGINALES EDISON
 BATERIAS PRIMARIAS Y VENTILADORES
 ELECTRICOS EDISON.
 FOLIAJADORES AUTOMATICOS BATES Y EDISON.

PROLONGACION DEL 5 DE MAYO 78
 APARATADO 2117

CABLES INSULADOS MEXICO
 CLAVES TELEGRAFICAS
 DE HERBES, A. S. C.
 HUNTING

Handwritten notes:
 This is a receipt
 for the National
 Phonograph Co.
 July 18 1906



Mexico, D. F., Mex. July 7th, 1906
 Mr. Walter Stevens, Manager Foreign Department
 National Phonograph Co.
 New York

Dear Sir:-

The suit brought against Mr. Alcalde, and Messrs Schmill & Co. (representatives of Victor Talking Machines) by the authors of some of the Mexican music which was recorded by us and also by the Victor Co. appears to be assuming rather serious proportions in view of the fact that these authors seem determined to make good their claims and if they are successful in winning their suit either against Alcalde or against Schmill & Co. it will establish a precedent which will prove very seriously detrimental to our business in this country, in-as-much as it is reasonable to believe that other Mexican authors and representatives of foreign authors would at once endeavor to collect a royalty or otherwise derive a profit from the sale of records reproducing their compositions.

Messrs Schmill & Co. are very ably represented in this law suit inasmuch as they have obtained the services of one of the most prominent lawyers, and Mr. Alcalde has also engaged a lawyer of some prominence. However, both these lawyers appear to be dragging the case along very slowly which in view of the vital interest of the matter to us is very disconcerting indeed. It seems that the latest step taken by Mr. Alcalde's lawyer isto have the National

MEXICAN NATIONAL PHONOGRAPH CO.

Phonograph Co., New York advised through the proper diplomatic channels that Mr. Alcalde has been sued.

I am not very familiar with legal proceedings of this kind, but I understand that this notice was forwarded by the Third Civil Judge of this city to the Department of Foreign Relations in Washington, and as I understand it, this step was taken merely to delay matters.

It is very probable that by this time Mr. Dyer has received information regarding this matter, but as Mr. Alcalde spoke of it a few days ago I thought it would not be amiss to write you on the subject. The authors must know by this time that The National Phonograph Co. has a branch office in this republic and the fact that they have not taken steps to sue us directly instead of suing only Mr. Alcalde would seem to indicate that they believe they have a better chance of making good their claims against him than they would have against us, thinking probably that he would not be able to go to the expense of protecting his rights, and that we could.

In view of the fact that if Mr. Alcalde were to lose this suit the result would be very disastrous to our interests and would it not be well to take this matter up actively ourselves instead of letting the matter drag along as it has been doing for the past ^{few} two months?

I am, of course, not very familiar with legal matters of this kind, but it would appear to me that if we engaged a competent lawyer and ^{con} tested this litigation ourselves as manufacturers the chances of defeating the complainants would be a great deal better than if the suit is allowed to drag on as it has so far.

Inasmuch as the complainants have not taken any action against us I have endeavored not to become involved in the matter in any way with the exception of keeping as well posted as possible by obtaining information from Mr. Alcalde and calling on his lawyer a couple of times. The last time I called with Mr. Alcalde on his lawyer,

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the latter stated that he was very dubious as to the outcome of this suit inasmuch as the complainants were doing their utmost to win their case and had cited similar instances in Europe and also here in Mexico where their contention had been sustained.

I would like very much to hear from you in regard to this matter and really believe that some action should be taken without loss of time.

Very Truly Yours

J. Habana
MANAGER.

MEXICAN NATIONAL PHONOGRAPH CO.

C O P Y .

L E G A L D E P A R T M E N T .

Orange, N.J. Oct. 9, 1906.

Mr. R. Cabañas,
Prolongacion del 5 de Mayo 77,
Apartado 2117, Mexico, D.F.,
Mexico.

Dear Sir:-

In reference to the litigation against Mr. Alcalde, I am just in receipt of a letter from Mr. Gilmore, in which he approves the suggestion that Mr. Serralde be retained to represent the interest of the National Phonograph Company. Kindly take the necessary steps to have this done. If there is any information that I can give, let me know and I will be glad to furnish the same. It occurs to me that since the question has been passed upon by the French Courts to the extent of holding that a copyright is infringed only by the reproduction of copyrighted words, the Mexican Courts might, at least, go no further than that. I have therefore, ordered a certified copy of the French decision, and will send it to you as soon as received. In Belgium, the case was decided squarely against the copyright, the Court holding as in this country, that there could be no infringement by a phonographic reproduction. A certified copy of the Belgian decision has also been ordered and will be sent you when received. In the meantime, I will be glad if you will keep me informed as to the situation.

Yours very truly,

(Signed) FRANK L. DYER.

FLD/ARK

MEXICAN NATIONAL PHONOGRAPH CO.

C O P Y .

L E G A L D E P A R T M E N T .

Orange, N.J. April 27, 1907.

Mr. R. Cabanas,
Avenida Oriente Num 117,
Apartado 2117, Mexico D.F.
Mexico.

Dear Sir:-

Yours of the 19th inst. is received in reference to the suit against Mr. Jorge A. Alcalde, of course the situation is somewhat delicate. Mr. Alcalde is naturally anxious not to assume any personal responsibility, and hence wishes to have the National Phonograph Company substituted in his stead as defendant or associated with him as joint defendant. The National Phonograph Company being a foreign corporation and not doing business in Mexico cannot be made a party to the suit unless it voluntarily consents thereto, and I consider it important that the National Phonograph Company should not be directly made a party to the suit, because should the case be lost, it might be embarrassing and complications might arise. Naturally, the desire of the Company not to voluntarily appear as the defendant or to submit to the jurisdiction of the Mexican Courts might lead Mr. Alcalde to misconstrue our motives and suppose that we were merely trying to avoid responsibility and to throw the whole burden upon him. You can, however, make any oral assurance you see fit, either to Mr. Alcalde or to his lawyer that the National Phonograph Company will stand behind all of its records, and will defend its

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No. 2 - Mr. R. Cabñas.

customers in any suits brought against them for the sale of such records either for the infringement of patents or copyrights: and that the Company will pay any judgments that may be rendered for such infringement. This has been the universal policy of the Company and we have no reason to depart from it in this case.

You should suggest to Mr. Alcalde that while there are legal reasons why the National Phonograph Company cannot consent to be made a party to the suit, we do not object to the Mexican National Phonograph Company being made a party to the suit if he desires to have that done. The Mexican Company does business in Mexico and therefore may very properly be sued as the distributor of the alleged infringing goods. In talking with Mr. Alcalde about this matter you must be sure and impress upon him the fact that we cannot give any guarantee of immunity, as above suggested, unless we have control of the suit, as it would be obviously unwise to make any such assurance under any other conditions. Of course if Mr. Alcalde desires to contest the case himself with his own lawyer, we cannot promise him protection, because the defence might not be handled in what we would regard as the best way. You might then say that if he wishes us to stand behind him in all respects, you have been requested to insist that Mr. Serralde shall have charge of the case, because we have entire confidence in Mr. Serralde and are not so well acquainted with his own lawyer. Possibly in this way you may be able to straighten out the situation, but you might discuss it with Mr. Serralde as he may have some other suggestions to offer. At any rate, we must insist upon taking charge of the case if we are to assume any responsibility, and since Mr. Serralde has already been consulted, I think it would be unwise to make any change.

Yours very truly,
(Signed) FRANK L. DYER

FLD/ARK

PHILIP MAURO
R. T. CAMERON
REVUE LEWIS
C. A. L. MASSIE
F. A. HOLTON

MAURO, CAMERON, LEWIS & MASSIE
COUNSELLORS AT LAW
Patents and Patent Causes
TRIBUNE BUILDING, 154 NASSAU STREET, NEW YORK
(520 F STREET, WASHINGTON, D. C.)

TELEPHONE (NEW YORK, 2281 DEANMAN
(WASHINGTON, 3848 EAST
CABLE ADDRESS (PHILADELPHIA-NEW YORK
(MAURO-WASHINGTON
(NEW YORK 2281 DEANMAN
(WASHINGTON 3848 EAST)

NEW YORK June 15, 1907.

Frank L. Dyer, Esq.,
Edison Laboratory,
Orange, New Jersey.

Dear Mr. Dyer:-

MEXICAN COPYRIGHT LAW. A customer of the Columbia Phonograph Co., in the City of Mexico, has recently been sued by the owner of a Mexican copyright for infringement of the same by selling sound-records; and we understand this defendant will answer the suit by alleging that he is not the manufacturer of the goods, but obtained them from the Columbia Phonograph Co. We are advised by Mr. Horace Pettit that a similar suit was brought a little over a year ago by the same parties against a customer of the Victor Co., for selling Victor records; that that defendant filed a plea; and that by some proceedings under the laws of Mexico, the Victor Distributing & Export Co. has been made a defendant. We anticipate the same steps in the suit against our customer, so that the Columbia Phonograph Co. may probably become at least a nominal defendant, though we do not know what grounds of jurisdiction the Mexican Courts could have over the Columbia Phonograph Co.

Mr. Pettit's clients and our clients are arranging to assist one another in the defense of this litigation, and it occurred to us that perhaps your clients might wish to make common cause. If such be the case will you please let me hear from you.

Yours very truly,

C. A. L. Massie

CM-J

June 18, 1907

C. A. L. Massie, Esq.,
154 Nassau St., New York, N.Y.

Dear Mr. Massie:--

Yours of the 15th inst. is received, in reference to the expected suit against the customer of the Columbia Phonograph Company, in Mexico, for alleged infringement of a Mexican copyright.

Some time in last July a similar suit was brought against Jerge A. Alcalde of Mexico City, a customer of the Mexican National Phonograph Company, on behalf of Messrs. José F. Elizondo, Luis G. Jorda and Rafael Medina, alleging infringement by the use and sale of phonograph records of certain selections from a comic opera entitled "El Chin Chun Chan". Mr. Alcalde promptly disavowed any responsibility in the matter, and stated that the records had been purchased from the National Phonograph Company. This statement was incorrect since the National Company does no business in Mexico, nor has it an office or representative in that country. The Mexican business is handled by a separate corporation - the Mexican National Phonograph Company.

However, I immediately corresponded with Mr. Alcalde

C.A.L.M--2--June 18, 1907

and told him that while we could not be made a party to the suit in Mexico, we would see that he was properly protected, and I therefore retained a prominent Mexican lawyer, L. F. A. Seralde, to assist in the defense.

Recently, the Judge of the Third Civil Court of Mexico granted letters rogatory, addressed to the National Phonograph Company, giving notice of the Mexican suit, and by petition of the Mexican Consul General in New York to Judge Charles H. Truax of the New York Supreme Court, these were served on the National Company at New York, on the 7th inst. Of course, as I view the matter, this service amounts to nothing. At the same time, of course, the National Company is prepared to stand behind all of its records, although manifestly that could not be safely done unless it should have charge or control of the litigation. At the same time it seems to me that this is a case where all three companies, the National, the Columbia and the Victor, should stand together and make a common cause, and I would be very glad to see you and Mr. Pettit to that end.

It would be unfortunate to have the pernicious doctrines of the French and Italian Courts find lodgment on this continent, because, as you know, the agitation in favor of the authors in this country is proceeding along the same lines. I would suggest, therefore, that you arrange with Mr. Pettit for a conference, in order that the matter may be discussed.

C.A.T.M.--3--June 18, 1907

Since the suit against Mr. Alcalde seems to be going ahead, I think we might very properly make that a test case.

Very truly yours,

FLE/MJL

July 19, 1907.

R. G. Kennedy, Esq.,
Stephen Girard Building,
Philadelphia, Pa.

My Dear Mr. Kennedy:-

Mr. Frank L. Dyon, of Orange, (attorney for the Edison Phonograph interests), Mr. Camp and I (of the Legal Department of the American Graphophone Company and the Columbia Phonograph Company), and Mr. Johnson, acting with the law firm having offices in the City of Mexico, had an informal meeting here at this office today regarding the Mexican copyright situation.

It is needless to say that you and Mr. Pettit were missed. Of course we could not take any positive or radical action, but merely considered the situation. It is exceedingly difficult for the American and English mind to foretell how the foreign mind (and particularly a Latin American mind) will work; and it is also difficult to forecast satisfactorily the outcome of litigation in a foreign country. We have all agreed that the situation is important, and of great interest to our respective clients. The case against your Victor dealer and the case against the dealer in Edison records were commenced about a year ago, and steps have been taken on behalf of the plaintiff in each case which purport to bring the two American corporations under the jurisdiction of the Mexican Courts as defendants. The suit against our dealer was commenced less than two months ago, and is not so far advanced. As I understood your telephone message yesterday, you are represented by Mr. Jorge

H. C. Kennedy, Esq., #2. July 19, 1907.

Vera Estanol, 2a Damas 2, Mexico City; Mr. Dyer's suit is defended by Mr. L. F. A. Seralde, and we shall probably be represented by Messrs. Warner, Johnson, Galston & Wilson. Mr. Dyer suggested, and the suggestion seems a good one to us, that steps be taken, if possible, to defend one test suit and have the other two suits suspended pending the determination of the test cause, the three Companies to divide equally all expenses incurred ^{subsequent to} ~~such~~ consolidation other than counsel fees, and each Company to pay its own lawyers. You will understand that this matter cannot be decided upon except by our respective clients. But I would be glad to know informally the views of yourself and of your client.

For our people to act with intelligence, it will be necessary to have at least an estimate, as near as may be, of the probable cost of defending the suit through the Court of first instance; the probable cost of appeal etc. Have you any information on this subject? We shall make inquiries of our Mexican attorneys.

Yours very truly,

CM-H.

(Sgd) C. A. L. MASSIE.

LETTER-HEAD HORACE BETTIT,

Philadelphia, July 24, 1907.

Re Mexican Copyright Litigation.

C. A. L. Massie, Esq.,
154 Nassau Street,
New York City.

My dear Mr. Massie:-

I duly received your favor of the 19th inst. concerning the interview between yourself, Mr. Dyer and Mr. Johnson, in the above entitled subject and I secured my client's thoughts in the matter and they seem to think that it is proper that we should all stand our share of the expense. I am a little uncertain, however, as to exactly what Mr. Dyer suggested as to the sharing of expense. You say that we will only defend one test suit, and suspend the others, and "divide equally all expenses incurred subsequent to such consolidation other than counsel fees". I do not understand what expense you have in mind, that is to say, whether it is only the cash outlay, for court fees, documents, evidence, etc., or whether these expenses cover the charges by Mexican counsel. I feel that we can co-operate and reduce the expense as you suggest.

The suit in which we are involved is the Second Civil Court of the City of Mexico, entitled Elizondo, et al. vs. Schmill. Schmill is one of our dealers in the City of Mexico. According to the judiciary procedure in Mexico, as I understand in a case like the present, Schmill defends himself by saying that the goods he sold were not his manufacture and were sold to him by the Victor Distributing and Export Company of New York; and then by some sort of commission, I suppose somewhat on the order of Letters Rogatory, the Mexican Court sent to New York Courts and the Victor Distributing and Export Company submitted themselves to the jurisdiction of the Mexican Courts, we having no objection, but rather desiring to do this that we could take full charge of the proceeding and not have Schmill's counsel interfering. This was done over a year ago, and at my Mexican correspondent's request, I sent him a large number of documents, copies of which I retained, and a few weeks ago he advised me that the case was in for trial, this advice conveying nothing to my mind as to whether it had been on trial, or whether it had been submitted, or what not, and a short time ago I wrote him for more definite information which I expect to receive in the course of a week or ten days. I have also an estimate of his charges, though not the cost of appeal, and in connection with the idea of defending one test suit, I rather think it would be proper for us to have another conference at which I could be present with my correspondence and the defendant's documents which are before the Mexican Courts so that we can arrive at a little more definite understanding. If you think this advisable, will you kindly ascertain Mr. Dyer's and Mr.

C.A.L.M., #2.

July 24, 1907.

Johnson's attitude. I will be at your service after this week as I am still on crutches and my physician forbids my traveling until next week.

Yours very truly,

(Signed) Horace Pettit

K

K/W

Mexico, February eighteen of one thousand nine hundred and eight. CONSIDERING the civil ordinary suit claiming the value of the edition or reproduction of some selections taken from the Zarzuela "Chin Chun Chan" made by means of disc and cylinder records, instituted by Mr. J. J. Elizondo on his own account and as representative of Messrs. Luis J. Jorda and Rafael Medina, protected and represented by the Attorney Mr. Miguel Lanz Duret, and against Mr. J. V. Schmill under patronage of Messrs. Lic. Alejandro Cuevas and Fernando Vega, and against The Victor Distributing and Export Company, representative of which is Mr. Lic. Jorge Vera Estanol, who is defending the same on account of having been made responsible by Mr. Schmill; all these persons residing in this City with the exception of the above said Company, which has its residence in New York, United States of America. --FIRST CONSIDERATION.

FIRST CONSIDERATION. The writ number six hundred and sixty four and forwarded under the number two thousand three hundred and seventeen, by the third section of Preparatory and Professional Instruction of the Ministry of Justice and Public Instruction, and addressed by this, on the tenth day of June of Nineteen hundred and four, the Mr. Luis G. Jorda, shows that this party occurred to that Ministry, stating that he reserved for himself the rights of Artistic Propriety which might correspond him in one edition which has made of the musical piece named "Banchof Blackberries" Gake Walk (Bacile del Pastel) by Abe Holzmann, and of the exemplar of the Gake Walk in the Zarzuela "Chin Chun Chan" shown in this sentence, in which this musical composition appears under the name above referred to. The aforesaid writ has perfect vale as proof on account of being authentic and to be included in the articles 439, second fraction, 441 and 461 of the Code of Civil Proceedings.

SECOND CONSIDERATION. By the same cause it is plainly shown with the official letter number six hundred and sixty four addressed by the said Ministry on the eight of February of the year of nineteen hundred and five, to Mr. Luis G. Jorda, that the same party made a declaration reserving for himself the rights of artistic and literary Propriety which might correspond him in the following pieces, for piano and song, from the Zarzuela "Chin Chun Chan" of which he is author, 1- number one, "Prelude y Cuarteto delos Payos"; number two, "Chanteuses y Coro"; number three, --"Coplas de los Polichinelas"; number four, "Coplas del Charamusquero"; number five, "Danza"; number six, "El Telegrafo sin hilos"; number eight, "Final".

THIRD CONSIDERATION. In the same way it is proved by the duplicate of the official letter, sent by said Ministry, on the eight of June of nineteen hundred and four, addressed to Messrs. Rafael Medina and Jose F. Elizondo who appeared before the right authority that they reserved for themselves the artistic and the representation rights which might correspond them in the Zarzuela "Chin Chun Chan" as authors of the written part.

FOURTH CONSIDERATION. From the aforesaid proofs results that the gentlemen Medina, Elizondo, and Jorda have acquired the two first, the literary and representation rights of the written part of the Zarzuela "Chin Chun Chan", and the latter the artistic and literary rights of the pieces above referred to for piano and song of the same zarzuela: rights which correspond to them as authors, as they filled the requisites which to this respect points out the article 1284 of the Civil Code.

FIFTH CONSIDERATION. In regard to the written part of the said Zarzuela, the authors fulfilled with the prevention contained in the article 1246 of the same code, in the copy which was presented in this suit appears the name of said authors, the date of the publication nineteen hundred and four

and the reservation of the Copyrights, on account of having made the deposit which stipulates the law. Consequently, Messrs. Medina and Elizondo can use the rights which flow from the requisites mentioned in the article just referred to, taking also into consideration the contents of article 1249 of the same Code.

SIXTH CONSIDERATION. In regard to the selection of the zarzuela Chin Chun Chan, to which it refers the "Second Consideration" of the copies in which same were published, and which are attached to these official documents in the part of the "author's proof" it appears that it was written on each one of them, the following statement, written on the cover: ; Donatido conforme a ley". Nevertheless, the party represented by the Attorney Vera Estanol, argues that the selections' authors did not state on the cover, nor on any other part visible of the copies, "the notation on being enjoying of the Copyrights as result of having deposited the quantity of copies which stipulates the law", and that the lack of this notation deprives the authors of the right to prosecute the falsification of their work, as per the articles 1248 and 1249 of the said Code. As per the concept of the Judge said requisite is fulfilled with the notation above referred to, because, it is plain that the object of this, could not be other than to let the public know that the authors are enjoying of the Copyrights since the moment that they-- announce the "deposit" in conformity with the law, which is what substantially, compels to do the article 1248, as it is not necessary that in the notation, be textually used the words of the law, because same does not order so, neither it is a formula, specified by the same law. Therefore, Mr. Jorda can use the rights which spring from said requisite.

SEVENTH CONSIDERATION. It appears announced in the catalog A. attached to the complaint, and in the catalogue B., exhibited as a proof by the authors, which catalogues were recognized by Mr. Schmill, the following selections from the written part of the zarzuela "Chin Chun Chan" the literary and representation rights of which correspond to Messrs. Medina and Elizondo: - "General Catalogue of nineteen hundred and six" A. Paço Gavilanes' First comic actor of the Principal Theater, Mexico. 99010. Chin Chun Chan. (Medina and Elizondo. "Monologo Comico". - "El Champion" 3230. Medina and Elizondo. "Monologo Comico". - General Catalogue B. "Spanish Talking Selections" A. 3230 "El Champion" (Medina and Elizondo) Monologo Comico, by Paço Gavilanes, Comico of the Principal Theater, Mexico. - Mr. Schmill admits that he has been dealing in this Republic with tubes and discs adaptable to phonographs or talking machines, which had engraved musical and literary selections of the zarzuela "Chin Chun Chan", and that he has announced the sale of discs in printed catalogues. Reached these proofs, has arrived the case to examine whether the reproduction of the above referred pieces made on discs adaptable to phonographs or talking machines, hurts the Propriety rights of the authors, meaning therefore, a falsification, and as well as to know if the dealing with said discs is illicit.

EIGHT CONSIDERATION. Article 1132 of the Civil Code declares that the inhabitants of the Republic, have exclusive right to "publish and to reproduce" as many times as they believe convenient, the whole or part of their original works by means of "copies" made by "printing", "lithography" or by any other "similar mean". Article 1168 of the same Code allows the dramatic authors, besides the exclusive right which they enjoy in regard to the "publishing and reproduction" of their works the right, also exclusive, as to the "representation". From the words used by the first of said precepts it is unmistakable deduced, that the right allowed by the law is to "publish and reproduce" by "copies" written by "Printing, by lithography, or by any other "similar mean" the whole or part of one original work. Now, the reproduction of the whole or a part of one work, made on a disc adaptable to phonograph or talking machine, is a "copy" executed by a

similar mean to Printing and Lithography? As a matter of fact, it is not a "copy", because it is not meant to be read the inscription of a composition made on a disc for talking machine, by reason that it is not possible to know by means of the eyes, as per the judicial proof given in this suit, the meaning of the marks engraved on the disc for a talking machine, neither those discs are useful in any way, except when used as a part of the mechanism of the talking machine. The talking machine is the one which takes profit of the propriety of the author, and publish it reproducing the voice of the person who reads the composition, making it known to the public in this way. The impossibility to read the inscription made on a disc adaptable to a phonograph or talking machine, evidently shows that same cannot be a copy unless the word "copy" is used in a very vague and unprecise way; the discs cannot be used in any way but as a part of the mechanism of the phonograph. From these reasons we infer that it is not possible in any way to allege forgery in the terms specified in the articles 1201, fraction 1, and 1204 for reproducing on discs adaptable to phonographs or talking machines, the whole or part of a literary composition, and for selling such discs in the Republic. Could be taken this decision as contrary to the guaranty given by the fourth article of our Constitution, which gives all men the right to protect the products of his work, and therefore, whatever may be the form by which it is reproduced the works of an author, there is falsification; but taking into consideration that the law of Artistic and Literary Propriety, gives specified and limited rights, same must be given the strict interpretation, and the Judge must not amplify its precepts, making equitative considerations or giving a forced interpretation to the terms of the law, which in the other hand is the only one to fix the right understanding of the aforesaid constitutional precept, as it is regulated by the same article.

NINTH CONSIDERATION. In the catalogues above referred to, it appears announced in the catalogue A., the following musical compositions of Mr. Jorda: Senor J.T. Ovando y Senoritas Perez. Terceos con orquesta, Mexico 3260, Chin Chun Chan (Jorda) "Coplas del Charamecuero". 3261. Chin Chun Chan (Jorda) "Danza". 1295 Chin Chun Chan (Jorda) "Danza". Senoritas Martinez Terceos, Mexico. Chin Chun Chan (Jorda) "Gavota de los Telefonos" - "Cuartete Echagayev". Chin Chun Chan "Completo de los Pollochinelas", in the catalogue B. Piezas de Orquesta, by the Art Pryor of New York, A.543 Chin Chun Chan (Jorda) "Coke Walk". In regard to these compositions Mr. Schmitz also agrees to have been dealing in this Republic with discs adaptable to phonographs and talking machines on which same were engraved, and that he has advertised the sale of the discs with such catalogues. Although the selections of the zarzuela Chin Chun Chan of which Mr. Jorda reserved for himself the copyright before the Ministry of Justice and Public Instruction are for PIANO AND SOLO, and therefore, it does not appear proven that the copyrights were reserved FOR THE WHOLE of the musical part of the aforesaid zarzuela, notwithstanding the fact that this POINT has not been discussed by the contending parties, and above all the recorded in the discs adaptable to phonographs and talking machines corresponds to the selections of which the copyright is legally enjoyed by Mr. Jorda and besides that this falsification has been foreseen by the law, in the article 1201, fraction 9th and 105th.

TENTH CONSIDERATION. In regard to the propriety, article 1191, fraction 5th. of the Civil Code declares that the musicians have exclusive right to the "reproduction" of their original works; article 1196 specifies that every body who enjoys the artistic propriety, can reproduce, or "authorize the reproduction" total or partial of their works, by means of an "art" or by a "similar or distinct" proceeding, and in the same or different scale.

Comparing these dispositions with the ones that guarantee the literary propriety, it is immediately noted a great difference in the form of reproduction which guarantees the ones and

the other precepts, as in regard to the literary rights the law allows the exclusive right to reproduce by means of "copies" in handwriting, in printing, by lithography, or by any other "similar" means, whereas in what respects to the artistic rights the law allows the right, also exclusive, not only by means of "copies", but by an "art" or by "similar" proceeding, or by a "distinct" proceeding, confirming this distinction the article 1201 of the same Code, while defining on fractions 1st. and 4th. the principal cases of falsification of the literary propriety and of the artistic propriety, as in regard to the former-- declares that there is forgery when the permission to "publish" the works, dissertations, lessons and original articles, mentioned in the Second Chapter of this book, has not been given by legitimate owner; and in regard to the latter there is falsification, when same permission has not been granted to "publish", and to "reproduce" the artistic works, by "equal" or by "distinct" proceeding from the one employed in the original work.

ELEVENTH CONSIDERATION. From the terms used by the law in relation to the artistic propriety result that same are not only applicable to editions properly said, produced by impression, or engraving, but it is understood, as per the spirit of the law plainly manifested, that it is applicable to all means for publishing and for making known the work which embodies the private propriety of the author; consequently selling the discs, cylinders and tubes for phonographs and talking machines, on which it was made by a particular proceeding, one reproduction, most useful and nearer to the reach of every body, of the musical work, as the reproduction made by the signs of the "art" of the music can only be profited by persons who are acquainted with it, and to produce less earnings to the legitimate author, whereas the reproduction made by the aforesaid mean can be useful to larger number of persons and in the same proportion to afford larger legitimate earnings which correspond to the author for its work, result that there is falsification.

Examining the facts most closely, it is necessary to observe that the musical compositions differing from the literary ones, are meant most especially to be played than to be simply read, and for this reason it is plain that the law guarantees "distinct" ways of reproduction in one of them than in others, as the nature and ends in view of the literary works and the artistic ones have differences so profound that it would be impossible for the ruler to leave them out without being taken into consideration.

TWELFTH CONSIDERATION. The observation made by the representative of the "Victor Distributing and Export Co." to the effect that the inscription of the whole or a part of a lyric-dramatic composition made on tubes, cylinders or discs, adaptable to phonographs and talking machines, is made with signs which are completely different to those used for publishing said kind of composition by means of pentagramic notes, has not any value, in first place because the law forbids the reproduction of the musical works not only by similar proceedings but by a different one, and in second place although at first sight there is vacillation for recognizing the signs engraved upon the discs and the ones written on music paper, analyzing a little more we realize that they lead to the same object. How is made that engraving in a cylinder for phonograph? It is said in one of the sentences presented by Mr. Lic Vera Estanol, as a proof of this case, "The defendant George Rossey is manufacturer of wax cylinders to be used on the mechanic apparatus known as phonograph. With plain knowledge of the rights of the appealing parties above said, the defendant placed on said phonograph, wax cylinders shaved and while he made to revolve same placed on a metallic cone or megaphone, he ordered to place the piece using several music instruments and that any person would sing the letter of the song. The same were received and transmitted by means of the megaphone

to what is called recording saphire point, which has a shaved shapp point and which engraves upon the revolving cylinders an inscription of both the musical composition and the written part of the song as exactly as the magaphone received them. Obtaining in this way a satisfactory inscription of what is called double inscription the defendant placed it on what is called double-phonograph and immediately underneath placed another wax cylinder shaved and smooth. The machine revolved both of them and by means of a double point of recording saphire, the engravings made upon the matrix inscription were reproduced on the smooth cylinder. On this way the defendant has reproduced up to five thousand copies of the matrix inscription of the music and songs of the appealing parties, with the object in view to be used on the phonographs. He has sold many of them and has obtained fair profits out of those sales. Up to here has been the text of sentence. Now, are not the engraved inscriptions the transcription or the translation of a music written through the ordinary method? The persons who played the pieces with the musical instruments and the person who sung, were not guided by the written notes? Between the signs engraved on the cylinders and the musical notation there are a material difference or difference in form, but the results are exactly the same.

THIRTEENTH CONSIDERATION. As per the reasons aforesaid it is undoubtedly that there is falsification which claim the authors in the inscription, on discs for phonographs, of the selections of the musical part of the zarzuela "Chin Chun Chan" and in the commerce made with such discs by Mr. Schmill taking in consideration the contents of the fraction IV of article 1201 and 1204 of the Civil Code.

FOURTEENTH CONSIDERATION. It is argued by the "Victor Distributing and Export Co." that as per the law in force in the United States of America the inscriptions made on tubes, cylinders and discs adaptable to phonograph or talking machines, of the selections of the zarzuela "Chin Chun Chan" does not constitute falsification, and the sale of such tubes, cylinders and discs neither. This argument is proved by the Copyright law of said Nation, and by the sentences given out by the Courts of the same Nation, presented in this suit, but this only proves that the law of the country can protect the author, as there is not falsification as per the Mexican Law in the reproduction of a work published in Mexico and made that reproduction abroad; but if the Law is impotent to protect the author further of our frontiers, it comes in their help, at least, forbidding the sale of forged works no matter if they have been made in the Republic or in any other part, as per the contents of articles 1204 and 1225 of the Civil Code and for this reason it does not care if the falsification was made in the United States as the only judicial consequence produced by this fact, is the one for preventing this Court to declare that the "Victor Distributing and Export Company" has falsified the musical work of Mr. Jorda, but same does not prevent that the law be applied to Mr. Schmill, who has violated the dispositions of it in prejudice of the rights of the said author, without be necessary the examination of the Penal Law in regard to this matter, because for the effects of this judgment it is not needed to take in consideration whether or not he violated a penal law, as the very dispositions of the Civil Code on Copyright, and especially those contained in articles 1224 and 1225, define who are the responsible ones of this falsification.

FIFTEENTH CONSIDERATION. The inscriptions made on tubes, cylinders and discs adaptable to phonographs or talking machines, and the sale of such tubes, cylinders and discs in the Republic, does not constitute the dramatic representation neither the musical representation of the zarzuela "Chin Chun Chan", as in the terms specified in fraction VIII of article 1207 of the Civil Code.

SIXTEENTH CONSIDERATION. On account of not having been

proved the number of discs or copies, and on account of not being proved that the reproduction of the selections of the zarzuela "Chin Chun Chan" has been made on cylinders neither that the defendant has sold same, and on account that were not also proved the damages and prejudice which have been claimed, the defendant is absolved of the claim in regard to these damages and prejudices and of the falsification in regard to the tubes and cylinders, but as far as the discs are concerned Mr. Schmill is condemned to pay the value of one thousand, besides of the ones which can be confiscated as per the contents of article 1214 of the Civil Code.

SEVENTEENTH CONSIDERATION. Do not deeming the undersigned that the parties have proceeded with temerity there is not reason for special condemnation of expenses. For the reasons and legal foundations exposed and as per article 604 of Civil Proceedings, our judgment is as per the following terms:—
Fifth. The authors proved in part their action taken in this suit.

Second. It is declared that does not exist falsification of the literary propriety and of representation de la zarzuela "Chin Chun Chan" through reproductions of selections of the same work, made on tubes or discs adaptable to phonographs and talking machines, and by the sale of same tubes and discs carried on in the Republic.

Third. J.V.Schmill is absolved from the demand instituted against him by Messrs. Jose F. Elizondo and Rafael Medina for falsification of the literary propriety and of "representation" which correspond them as authors of the zarzuela "Chin Chun Chan".

Fourth. It is declared that exists falsification by the reproduction on discs adaptable to phonographs of the musical part of the zarzuela above referred to, and by the sale of such discs on the Republic.

Fifth. J. V. Schmill is condemned to pay to Mr. J. Jorda the value of one thousand copies of the discs adaptable to phonographs wherein it appear reproduced musical selections from the zarzuela "Chin Chun Chan", and besides the value of copies which could be confiscated.

Sixth. It is not made special condemnation for expenses. Thus, definitely judging was sentenced this suit, and signed by the Second Judge of the Civil Courts, Mr. Lic. Jose Rodriguez Gil, advising the acting party to furnish within twenty four hours, the seals for this suit, in the understanding that shall pay ten pesos if same is not done. Gives faith—

Jose Rodriguez Gil. Carlos Garcia Jr.

(Signed)

(Signed)

**Legal Department Records
Phonograph - Case Files**

International Graphophone Company v. Thomas A. Edison et al.

This folder contains material pertaining to the suit brought by the International Graphophone Co. against Edison, John F. Randolph, William E. Gilmore, the National Phonograph Co., the Edison Phonograph Works, and the Edison Manufacturing Co. in the New Jersey Court of Chancery. The case was initiated in January 1905 and involved the contractual and financial responsibilities of the Edison Phonograph Works, in which the International Graphophone Co. possessed stock. The selected items consist of the bill of complaint, Edison's answer, and a letter by Frank L. Dyer regarding the progress of litigation. Among the items not selected are exhibits, correspondence relating to the dividends of the Edison Phonograph Works, and other material concerning the suit and the eventual receivership of the International Graphophone Co.

IN CHANCERY OF NEW JERSEY.

To his Honor WILLIAM J. MAGIE, Chancellor of the State of New Jersey.

Humbly complaining shows unto your Honor your orator, International Graphophone Company, a corporation created and existing under the laws of the State of New York and having its principal office in the Borough of Manhattan, in the County and State of New York, and a stockholder in the Edison Phonograph Works, a corporation created and existing under the laws of the State of New Jersey, hereinafter called the "Works", for and in behalf of itself and all other stockholders in the said Works who may come in and contribute to the expenses of this suit.

1. That your orator is a corporation created and existing under the laws of the State of New York, and was formed on or about the twenty-second day of August, eighteen hundred and eighty-nine, by a certificate filed and recorded in the office of the Secretary of State of the State of New York, pursuant to the provisions of an Act passed by the Legislature of the State of New York February 27th, 1848, and entitled "An Act to authorize the formation of corporations for manufacturing, mining, mechanical or chemical purposes", and of the several acts extending and amending the same, and that the objects for which your orator was formed, as stated in its said certificate of incorporation, were and are to manufacture, acquire, procure, develop, exploit, sell and use and to license others to manufacture, develop, exploit, sell and use all inventions or any part thereof relating or appertaining to the recording and re-

IN CHANCERY OF NEW JERSEY

Between

INTERNATIONAL GRAPHO- :
PHONE CO.,

Complt., : On
Bill
: etc.

-and-

THOMAS A. EDISON, and :

others, :
Defts. :

BILL OF COMPLAINT.

Lindabury, Depue & Faulks,
Sols. for Complt.

LAW OFFICES
JOHN E. HELM
PRUDENTIAL BUILDING
NEWARK, N. J.

producing speech and musical or other sounds, or which are available in connection therewith or auxiliary thereto and other new and useful inventions, either before or after the same are patented; to acquire, procure and own, American and foreign patents, for said inventions; and to lease, purchase, hold, manage, improve, develop, operate, sell, convey or exchange any and all real estate necessary and proper for the successful transaction of the business of the Company in the States of New York and Connecticut, and other States and Territories of the United States and in all foreign countries of the world, as by the said certificate of incorporation, or a duly attested copy thereof, will more fully and at large appear, and to which your orator begs leave to refer for greater certainty should it be necessary hereafter so to do.

2. That your orator, pursuant to the powers and privileges conferred upon it by law and by the said Acts of the Legislature of the State of New York has acquired in the manner hereinafter more particularly set forth, and now owns and holds one thousand four hundred and forty shares of the capital stock of the said Works of the par value of one hundred dollars each, and that the said shares stand in the name of your orator on the books of the said Works, and have so stood since in or about the month of March, One thousand eight hundred and ninety.

3. That in or about the year eighteen hundred and seventy-eight Thomas Alva Edison invented certain machines capable of recording and reproducing sounds, known as phono-

graphs, and also certain appliances and devices to be used in connection therewith, and secured letters patent of the United States and foreign countries covering each of the said inventions.

4. That afterwards and on or about the eighth day of October, eighteen hundred and eighty-seven, the said Edison caused and procured a corporation to be formed under the laws of the State of New Jersey by the name of the Edison Phonograph Company, which said corporation was formed by the filing of a certificate of incorporation in the office of the Secretary of State of New Jersey on the said last mentioned day, under and by virtue of the provisions of an act of the Legislature of the State of New Jersey entitled "An Act concerning corporations", approved April 7, 1876, and the several supplements thereto, with the powers in the said certificate mentioned, that is to say: To manufacture and sell phonographs and apparatus and devices embodying the same; to purchase and own letters patent, and to grant rights and licenses thereunder; to buy lands and to erect thereon buildings and machinery for the purposes of such manufacture, and to issue bonds secured by mortgage upon the property and franchises of the said company; that the authorized capital stock of the said company as fixed by the said certificate of incorporation was one million two hundred thousand dollars divided into 12,000 shares of the par value of one hundred dollars each; that the names and residences of the stockholders named in and who executed the said certificate, and the number of shares subscribed by each are as follows: Thomas

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A. Edison 11,960 shares; Alfred G. Tate 10 shares; John C. Tomlinson 10 shares; Ezra T. Gilliland 10 shares; Samuel Insull 10 shares; to which said certificate of incorporation, or the record, or a certified copy thereof, your orator begs leave to refer for greater certainty should it be necessary hereafter to do. And your orator shows and charges the fact to be that the said Tate, Tomlinson, Gilliland and Insull were in the incorporation of the said Edison and wholly under his direction and control, and without any personal or financial interest in the said company, and that the said company was formed by the said Edison for the sole and exclusive purpose of entering into and performing the several covenants and agreements thereafter entered into by it, as hereinafter more particularly set forth.

5. That afterwards and on or about the twenty-eighth day of October, Eighteen hundred and eighty-seven, the said Edison entered an agreement to be entered into between himself and the said Edison Phonograph Company by which in consideration of the issuing to him of all or nearly all of the capital stock of the said company, he agreed to and thereby did transfer, assign and set over unto the said company all of his said letters patent which had been issued in the United States of America and in the Dominion of Canada, and his existing applications for letters patent in the said countries for inventions and improvements in phonographs and other sound reproducing machines, and the extensions of the said letters patent thereafter granted in the said countries, and did further agree to equip and furnish a factory suitable for the manu-

facture of phonographs and the supplies necessary therefor and capable of supplying the demands of the said Edison Phonograph Company, and to manufacture and to sell such phonographs to the said Edison Phonograph Company upon certain terms and conditions in the said agreement mentioned, and by which the said Edison Phonograph Company granted to the said Edison the exclusive right, authority and licenses to manufacture the various inventions covered by the said letters patent and applications therefor, then owned or to be thereafter owned by the said company, and that on or about the said last mentioned day the said Edison also entered into an agreement with one George Edward Gouraud, of London, England, by which the said Gouraud agreed to purchase from the said Edison all phonographs and the supplies necessary therefor required for use in foreign countries, upon certain terms and conditions therein mentioned, and the said Edison agreed that one-half of the output of any factory established by him in the United States for the manufacture of phonographs and supplies should be at the disposal of the said Gouraud,

6. That afterwards, and on or about the third day of May, eighteen hundred and eighty-eight, the said Edison caused and procured a corporation to be formed under the laws of the State of New Jersey, by the name of Edison Phonograph Works, which said corporation was formed by the filing of a certificate of incorporation in the office

of the Secretary of State of the State of New Jersey on the said last mentioned day, under and by virtue of the provisions of an Act of the Legislature of the State of New Jersey entitled "An Act concerning corporations", approved April 7, 1875, and the several supplements thereto and acts amendatory thereof, with the powers in the said certificate mentioned, that is to say: to manufacture phonographs and the various apparatus and devices connected therewith and to sell the same, and to manufacture and sell various other machines, apparatus, devices and things; to buy lands, and to erect thereon buildings and machinery for the purpose of such manufacture; to issue bonds secured by a mortgage or mortgages upon the property and franchises of the said Company, and to sell the same for the purpose of raising money with which to build, purchase and erect factories, machinery, &c.; that the said Company was formed with an authorized capital stock of three hundred thousand dollars, divided into three thousand shares of the par value of one hundred dollars each, and that the names and residences of the stockholders named in and who executed the said certificate, and the number of shares subscribed by each, are as follows: Thomas A. Edison, one thousand five hundred and sixty shares; Charles Batchelor, five shares; John C. Tomlinson, five shares; and Alfred O. Tate, Trustee, one thousand four hundred and fifty shares, making in all the full authorized capital stock of the said Company, to which said certificate of incorporation, or the record

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or a certified copy thereof, your orator begs leave to refer for greater certainty should it be necessary hereafter so to do. And your orator shows and charges the fact to be that the said Batscheler, Tomlinson and Tate were in the incorporation of the said Works acting as the representatives and agents of the said Edison, and wholly under his direction and control, and were without any personal or financial interest in the said Works.

7. That afterwards, and on or about the twelfth day of May, Eighteen hundred and eighty-eight, a certain agreement in writing was by the procurement of the said Edison and by virtue of his control of the directors and stockholders of the said Works made between the said Edison and the said Works, in and by which, after reciting the said agreement between the said Edison and the said Edison Phonograph Company and the said agreement between the said Edison and the said Geraud, and that the said Works had been organized to undertake the manufacture of phonographs and supplies required by the said Edison Phonograph Company and the said Geraud, and was willing and desirous of assuming the obligations of the said Edison under the said agreements between him and the said Edison Phonograph Company and between him and the said Geraud, so far as the manufacture of phonographs and supplies for domestic and foreign use was concerned, the said Edison agreed to give and did thereby give to the said Works the exclusive right, authority and license under each and every the letters patent and applications therefor under

which a license has been granted to him by the said Edison Phonograph Company, pursuant to the provisions of the said agreement made between them on the twenty-eighth day of October, Eighteen hundred and eighty-seven, to manufacture the inventions therein severally described, and agreed that he would give and grant to the said Works a similar license under each and every the letters patent upon inventions under which he might receive or be entitled to receive a license to manufacture pursuant to the said last mentioned agreement, and did further agree to give, and he thereby did give, to the said Works the exclusive right, authority and license to manufacture phonographs and the supplies necessary therefor for export and use in foreign countries, it being therein recited to be the intention to confer upon the said Works the same right and license under the patents owned or to be owned by the said Edison Phonograph Company as were conferred by the said last mentioned company upon the said Edison, and the same right to manufacture phonographs and supplies for export and use in foreign countries as were conferred upon the said Edison by the contract between him and the said Gouraud hereinbefore referred to, and the said Works did thereby on its part agree with the said Edison that it would forthwith equip and erect a factory suitable for the manufacture of phonographs and the supplies necessary therefor and capable of supplying the demands of the said Edison Phonograph Company, and that it would promptly meet and fill all the

orders of the said company and would deliver to it or to such persons as it might direct, for sale within the United States of America and the Dominion of Canada, all phonographs and supplies so ordered at the actual cost of manufacture thereof plus twenty per cent. of such cost, the cost of manufacture being defined to include cost of labor, material and general expense; that it would not sell said phonographs and supplies so to be manufactured for domestic consumption to persons other than the said Edison Phonograph Company save by its direction and with its consent; that the factory so to be established by it should be of a capacity sufficient not only to meet the demands of the said Edison Phonograph Company, but also to supply the orders of the said Gouraud for the foreign market, and that it would promptly supply all the orders of the said Gouraud and would deliver to him, ^{or} such persons as he might direct, the said phonographs and supplies at the actual cost of manufacture plus twenty per cent thereof, the cost of manufacture to include labor, material and general expense; that if required by the said Gouraud one-half of the entire output of the said factory should be subject to the order of the said Gouraud, and that no phonographs or supplies should be sold by the said factory for foreign use save to the said Gouraud, or such persons as he might designate. That in and by the said agreement the said Works did further agree with the said Edison to, transfer, assign and deliver to him, his heirs, executors, administrators and assigns, fifty-two per cent. of its

entire capital stock as and when the same might be issued by it, that is to say, for every four and eight-tenths shares of its capital stock sold or issued for property by the said Works as and when the same was sold or issued it would transfer, assign and deliver to the said Edison, his heirs, executors, administrators and assigns, five and two-tenths shares of its capital stock until the then present capital of three hundred thousand dollars had been entirely issued; and that ^{in case} at any time within twenty-five years from the date of the said agreement, and for any purpose, it should increase its then present capital of three hundred thousand dollars it would transfer, assign, and deliver unto the said Edison, his heirs, executors, administrators and assigns, fifty-two per cent of each and every such increase. That the said Edison thereby agreed for himself, his heirs, executors, administrators and assigns, that of the stock issued and delivered to him or them pursuant to the provisions of the said contract he or they would immediately upon its receipt transfer and assign thirty-eight per cent. of the stock so issued and delivered to him or them to a trustee to be agreed upon between him and the said Works, upon the following trusts and conditions, that is to say:

"E. That said stock so delivered to the trustee shall not participate in any of the earnings of the party of the second part (being the said Works) nor be entitled to share in any dividends. If, however, the earnings of the Company which it decides to declare as

dividends in any one year amount to over twenty-five per cent. (25%) on its entire stock exclusive of such stock so held in trust as aforesaid, then such trust stock shall be entitled to participate ratably with the other stock in such excess; and

2. That the party of the first part (being the said Edison), his heirs, executors, administrators and assigns, shall have the exclusive right to vote upon the stock so held in trust at all meetings of the Company, and a proxy shall be given him or them for such purpose; and

3. That in case the company is dissolved or should go into liquidation such trust stock shall not be entitled to participate or share in the property or assets of the Company; to which said agreement your orator prays leave to refer for greater certainty should it be necessary hereafter so to do.

8. That shortly after the making of the said last mentioned agreement, and pursuant to the terms thereof, the said Works did issue to the said Edison One thousand five hundred and sixty shares of its capital stock, being fifty-two per cent. of the entire amount of its then authorized capital stock; that thereafter and on or about the tenth day of March, in the year Eighteen hundred and ninety, the said Edison Phonograph Works duly increased its authorized capital stock from the sum of three hundred thousand dollars to the sum of six hundred thousand dollars, and thereupon issued to the said

Edison one thousand five hundred and sixty additional shares of its stock, being fifty-two per cent. of the said increase in its said capital stock; that upon the issuing to the said Edison of the one thousand five hundred and sixty shares of the capital stock of the said Works first above mentioned, the said Edison did deposit five hundred and ninety two and eight tenths of said shares, being thirty-eight per cent. thereof, with the Manhattan Trust Company of New York, as a Trustee selected by him and the said Works upon the trusts in the said last mentioned agreement set forth, and thereupon received and held, and still holds pursuant to the said agreement, proxies, to vote the said shares of stock at the annual meetings of the stockholders of the said Works, and that upon the issuing to the said Edison of the one thousand five hundred and sixty shares of the capital stock of the said Works secondly above mentioned, the said Edison did deposit five hundred and ninety-two and eight tenths of said shares being thirty-eight per cent. thereof, with the said Trust Company as Trustee as aforesaid, and thereupon received and held and still holds pursuant to the said agreement proxies to vote the said shares of stock as aforesaid, and that by virtue of the said proxies and of the ownership by the said Edison of the remaining one thousand nine hundred and thirty-four and four tenths shares of the three thousand one hundred and twenty shares of the said Works so issued to him as aforesaid, the said Edison controls, and has ever since the month of March, eighteen hundred and ninety, controlled, the selection and election of the

officers and directors of the said Works, and has controlled, directed and managed all of its business and affairs. And your orator further shows and charges the fact to be that all of the acts and doings of the said Works hereinbefore and hereinafter referred to, have been at the procurement and under the sole direction and control of the said Edison.

9. That on or about the twenty-sixth day of February, eighteen hundred and ninety, the said Edison and your orator caused and procured a corporation to be formed under the laws of the State of New Jersey by the name of Edison United Phonograph Company, with an authorized capital stock of \$1,000,000 divided into ten thousand shares of the par value of one hundred dollars each, which corporation was formed by the filing of a certificate of incorporation in the office of the Secretary of State of the State of New Jersey on the said last mentioned day under and by virtue of the provisions of an Act of the Legislature of the State of New Jersey entitled "An Act concerning corporations", approved April 7, 1875, and the several amendments supplemental thereto and acts amendatory thereof, for the purposes therein mentioned, that is to say, - (1) To manufacture, buy, sell, rent, lease and otherwise acquire, use and cause to be used, also to hold and in any way dispose of phonographs, phonograph-graphophones, graphophones, and all articles and instruments and machines of any other kind or description whatsoever used or capable of being used or intended to be used for the recording and reproducing of

sounds, and any or either of them or any part thereof, and any and all material, articles, contrivances, appliances, and things now or hereafter used or required in the manufacture, use or operation of the same; (2) so far as may be necessary for the business of the Company and as the Company may be allowed by contract and by law to do, to manufacture purchase, own, sell and use, and to license others to manufacture, sell and use patents, patent rights, inventions, processes and mechanical contrivances and appliances relating to the manufacture, use or operation of said phonographs and other instruments of the character above described; (3) so far as may be desirable and necessary for the business of the Company and the law may allow, to sell, grant and assign the aforesaid patents, patent rights, inventions, processes and contrivances relating to the manufacture, use or operation of the said phonographs and other instruments above described or any of them; (4) so far as may be allowed by contract and by law, to purchase or lease manufactories and other property for the business of the said Company; (5) so far as it may legally be done, to buy, own, sell and otherwise dispose of shares in the capital stock of any corporation engaged in the business of manufacturing, making, using or selling phonographs and other instruments of the character above described, or using or dealing in materials, appliances, instruments or machines dealt in by the Company, in connection with its said business; (6) also so far as the same may be legally be done, to acquire, hold and convey in the State of New Jersey and in the State of New York and elsewhere either within the United States of America or in other parts of the world, should the business of

the said Company require it, such real estate as shall be necessary for the convenient transaction of its said business, and to invest the funds of the Company in the stocks, bonds or securities of other corporations or companies owning lands situated in this State or in any of the other states comprising the United States of America or, in any other countries in the world, and to mortgage any part of its real or personal estate and to issue bonds therefor as provided by law; (7) to do such and every lawful act incidental to its said business as may be allowed by law, and to exercise all the powers granted by the laws of this State to corporations whether the same be expressed or implied, to which said certificate of incorporation, or the record, or a certified copy thereof, your orator begs leave to refer should it be necessary hereafter so to do.

10. That the said Edison United Phonograph Company was formed for the purpose of vesting in the said Company all of the letters patent theretofore issued to the said Edison or then or thereafter to be applied for by him, in countries save the United States of America and the Dominion of Canada, for inventions relating to phonographs and improvements therein and supplies necessary therefor, and also the right, title and interest of your orator in and to certain letters patent and applications therefor for inventions of and improvements in sound producing machines known as graphophones and phonograph-graphophones issued in foreign countries, which were of large value, and that the four agreements next hereinafter set out were entered into simultaneously in furtherance of the said purpose, and for the further purpose of conferring upon the said Works the

right and license to manufacture all of the phonographs, graphophones, phonograph-graphophones, devices and supplies covered by the said letters patent, applications and inventions.

11. That afterwards and on or about the eleventh day of March, eighteen hundred and ninety, an agreement in writing was made between the said Edison and the said Edison United Phonograph Company, bearing date the day and year last aforesaid, wherein, after reciting that the said Edison was the inventor of what was generally known as the phonograph, which invention is more particularly described in Letters Patent of the United States No. 200,521, dated February 19, 1878, for an "Improvement in Phonographs or Speaking Machines", and upon and including which invention, letters patent of various countries had been granted to him, and that applications for other letters patent therefor had been made, and that the said Edison United Phonograph Company was a corporation organized for the purpose of exploiting the introduction and use of phonographs, graphophones and speaking machines, and desired to acquire from the said Edison his said certain letters patent and inventions in all the countries of the world save and except the United States of America and the Dominion of Canada, and also proposed to acquire certain other inventions and letters patent relating to graphophones, phonograph-graphophones and other kinds of speaking machines, it was among other things provided that the said Edison, in consideration of being given five thousand shares of the capital stock of the said Edison United Phonograph

Company, thereby agreed to and did transfer, assign and set over unto the said last mentioned Company his entire right, title and interest in and to the said existing letters patent and existing applications for letters patent and in all extensions of the same thereafter granted, in each and every country of the entire world save and except the United States of America and the Dominion of Canada, upon his aforesaid inventions and improvements relating to phonographs or speaking machines, it being, however, distinctly understood and agreed that the said inventions, improvements, letters patent and applications were restricted to phonographs or other speaking machines, and to phonograph supplies and appliances especially invented or created to be used with phonographs or other speaking machines, but not including batteries, battery cords, tables, cabinets and other similar articles appertaining to or used in connection with phonographs, or other speaking machines, and commonly sold in the open market, and also not including the right to use any of said inventions and improvements in or in connection with dolls, toys, toy figures and clocks, the right to use the same in or in connection with dolls, toys, toy figures and clocks, being especially excluded from the said assignment and agreement. That in and by the said agreement it was further provided that it being the intention of the parties thereto that the said Company should grant to the said Edison, upon certain terms and conditions, the sole and exclusive right to manufacture for it and its licensees and assignees, under all of the letters patent or rights which it then owned or controlled, or at any time thereafter

might own or control, relating to the said inventions or improvements, and the said Edison having theretofore requested the said Company to consent that the aforesaid right to manufacture should be given to a certain corporation to wit, the said Works, and the said Company being willing to accede to the aforesaid request of the said Edison it was agreed that simultaneously with the execution of the said agreement, a certain license agreement to manufacture should be entered into by and between the said Company and the said Works, a copy of which said proposed license agreement was annexed to the said last mentioned agreement, to which said agreement, and the schedules and exhibit ^{annexed} thereto, your orator prays leave to refer for greater certainty should it be necessary hereafter so to do.

12. That on or about the said eleventh day of March, eighteen hundred and ninety, an agreement in writing was made between your orator and the said Edison United Phonograph Company bearing date on that day, wherein it was recited, as the fact was, that your orator had certain right, title and interest in and to certain letters patent granted in foreign countries for certain inventions relating to graphophones, phonographs and speaking machines, and their attachments and appurtenances, and that the said Edison United Phonograph Company was a corporation organized for the purpose of exploiting the introduction and use of phonographs, graphophones and speaking machines, and desired to acquire from your orator all its right, title

and interest in and to the said letters patent and inventions and applications therefor therein mentioned, in all the countries of the world, and that in and by the said agreement between your orator and the said Edison United Phonograph Company your orator in consideration of being given five thousand shares of the capital stock of the said Company (the same being given and accepted as fully paid and unassessable), thereby agreed to and did transfer assign and set over unto the said Company its entire right, title and interest in, to, under and by reason of the said letters patent and inventions and applications therefor therein mentioned. That in and by the said agreement it was further, among other things, provided as follows:

"The second party (being the said Edison United Phonograph Company) having acquired simultaneously with the execution of this agreement certain right, title and interest in certain letters patent, granted in certain foreign countries for inventions of Thomas Alva Edison such rights having been acquired by reason of an agreement between the said Thomas Alva Edison and the said second party of even date herewith, and it being believed to be for the interest of the parties hereto and of the said Edison that the second party hereto should grant to the Edison Phonograph Works, a corporation organized and existing under the Laws of the State of New Jersey, a certain license agreement to manufacture phonographs and graphophones and other articles, it is agreed that si-

simultaneously with the execution of this agreement, a certain license agreement to manufacture shall be entered into by and between the second party hereto and the said Edison Phonograph Works, whereby the said Edison Phonograph Works shall assume and agree to do and perform each and every thing that may be necessary to be done and performed in order to maintain the right, title and interest of the second party herein to the said letters patent and inventions and applications therefor therein mentioned, a copy of which said proposed license agreement was annexed to the said last mentioned agreement, which said agreement, with the schedules and exhibits thereunto annexed, is in the possession of your orator ready to be produced and proved when and where this Court may direct, and to which your orator begs leave to refer for greater certainty should it be necessary hereafter so to do.

13. That on or about the said eleventh day of March, eighteen hundred and ninety, a certain agreement in writing (being the license agreement referred to and provided for in the two last mentioned agreements) was entered into by and between the said Edison United Phonograph Company as party of the first part, and the said Weeks as party of the second part, in which, after reciting as follows:

"Whereas, the first party is engaged in the business of promoting the introduction and use of speaking machines, including phonographs, graphophones, and phonograph-graphophones, and in connection with the said business has acquired rights under certain agreements relating to patent rights and franchises in certain parts of the world, entered into by and between it and other parties, among which agreements are the following, to wit: Two agreements made on the same date as the execution of this agreement, one between Thomas Alva Edison and the first party hereto, and the other between the International Graphophone Company and the first party hereto, reference to both of which agreements is now made for greater particularity; and

"Whereas, the first party expects to own or acquire in the future, either in whole or in part, certain other patents or equivalent rights relating to speaking machines as aforesaid, in the different countries of the world; and

"Whereas, the first party proposes by this agree-

ment or grant to the second party an exclusive license to manufacture in every country of the world, so far as it may legally have the power to grant such rights, all inventions and improvements relating to phonographs or other speaking machines as aforesaid, and relating to devices, supplies and appliances of all kinds connected with the same or with the manufacture thereof, which the first party has heretofore acquired or may hereafter acquire in any and all countries of the world, but such manufacture to be for the sole use and benefit of the first party and its assigns and authorized licensees or agents", it was among other things provided as follows:

"First, - The first party hereby agrees to grant and hereby does grant to the second party the sole and exclusive right in all parts of the world, including the United States and the Dominion of Canada and all other countries, to manufacture for it, and upon its order, for its assigns, agents and licensees, but for no one else, all inventions and improvements appertaining to phonographs, graphophones, phonograph-graphophones and speaking machines of every kind and all supplies and appliances especially invented or created to be used with phonographs, graphophones or other speaking machines (but not including batteries, battery cords, tables, cabinets, and other similar articles appertaining to or used with speaking machines and commonly sold in the open market), described in or covered by the agreements and patents referred to in the above recitals hereof, or described in or covered by any

other present or future agreements, inventions or patents franchises, privileges or governmental good-will, or the equivalents thereof, and relating to aforesaid inventions and improvements first above named in this section, which the first party may now or hereafter make, acquire, or be licensed under, or become interested in, in any part of the world."

"Second,- The second party agrees to manufacture to the extent herein provided for, the aforesaid phonographs machines and the separate parts thereof, and the said supplies and apparatus described in and covered by said patents and agreements, and to deliver the same to the first party, or its order, wherever manufactured, at the estimated actual cost of manufacture plus twenty per centum thereof, the said cost of manufacture to include cost of labor, material and general expense, not including rent or interest or depreciation, except that at the end of each calendar year there shall be paid on account of depreciation an amount equal to five per cent. of the value of the machinery used in the manufacture of said machines, parts devices and apparatus, but only a proportionate amount to be paid for a part of a year. Such royalties for the use of patents as the second party may be compelled to pay and the first party may elect to have the second party use, shall also be included in general expense."

"Fifth,- The extent to which the manufacture of articles covered by this agreement is to be carried on, shall be regulated by the requirements of the first party,

as indicated by its firm orders, subject, however, to the following restrictions, that is to say: Within one calendar month from the time when the second party shall give written notice to the first party of the particular kind or type of phonograph or other speaking machine it has determined on as above provided for (and the second party agrees that it will determine on such machine within not less than one month from the date of this instrument), the first party shall give to the second party its firm order for the delivery of ten (10) complete machines per diem, exclusive of Sundays and legal holidays, the said order to continue in force for a period of not less than three months from the date of the beginning of delivery thereunder, such delivery to begin as soon as the second party is ready to deliver, but not later than sixty days from the receipt by the second party of such order, if the first party so insists."

"Should the first party desire either to increase or diminish the aforesaid daily amount of output, to take effect after the expiration of the said three months it shall serve written notice upon the said party at least six weeks before the date when such increase or diminishing of output is to take effect; and should the first party desire at any time or times thereafter to again regulate the amount of the daily output, written notice thereof similar to the notice provided for above, shall be served upon the second party, which shall take effect six weeks after the receipt thereof, the second party agreeing at any time after the expiration of the first period of three

mentioned above, to increase or diminish the said daily output, to the extent of at least ten (10) per diem, after the expiration of six weeks from the date of the receipt of any of the said written notices."

"Tenth,- The second party hereto reserves the right and option to carry on the said manufacture in the United States and in such other countries and to such extent in such several countries as it may from time to time deem desirable, it being understood that the second party shall as regards all manufacturing in all countries comply in all respects with the laws of those countries. As regards any countries whose laws make it necessary to carry on the manufacture of the articles herein provided for, the second party agrees to establish factories in all such countries, to conform to the requirements of the laws thereof, and sufficient, so far as necessary, to supply the trade therein in such substantial manner as is provided for by this agreement, and in case of any dispute on this point it shall be left to arbitration, as provided for below in the thirteenth section."

"Save and except as above provided for, the first party will not during the continuance of this agreement, license or authorize any other party whatsoever to manufacture any of the articles herein provided for in any part of the world, it being the intention of this instrument that to the second party hereto shall belong the sole and exclusive right, privilege, good-will and license, to manufacture phonographs, graphophones and other speaking

machines, and all supplies and appliances especially invented or created to be used with phonographs or other speaking machines, but not including batteries, battery cords, tables, cabinets and other similar articles appertaining or used in connection with speaking machines and commonly sold in the open market."

"Twelfth,- The second party hereby assumes, and agrees to do and perform, so far as it can legally do so, each and every thing which the first party assumed and agreed to perform in its certain agreement with the International Graphophone Company, dated March 11th, 1890 (a copy of said agreement being hereto annexed entitled "Copy of International Co. Agreement", and marked Exhibit C.)" to which said agreement when the same shall be produced and proved your orator begs leave to refer for greater certainty should it hereafter be necessary so to do.

14. That on or about the said eleventh day of March, eighteen hundred and ninety, an agreement in writing bearing date on said day was made between the said Edison and your orator, in and by which said agreement it was recited that the parties thereto were interested in the promotion and success of a certain corporation then being formed known as the Edison United Phonograph Company, and were also interested in a certain other corporation known as the Edison Phonograph Works, which corporation was recited to be closely identified with the interests of the said Edison United Phonograph Company, and that the said parties desired to enter into certain arrangements and agreements for the management of the business affairs of the aforesaid two corporations for their own mutual benefit as well as for the benefit of all present and future share-

holders therein, and that after the making of the said recitals it was in and by the said agreement by the parties thereto, among other things, agreed as follows, that is, to say: That so far as they had or might thereafter have the legal right and power to do so, the board of directors of the said Works should always consist of five members, three of which should be selected by the said Edison and two of which should be selected by your orator, and that so far as they could legally do so, the parties to the said agreement would always cast their votes as stockholders in the said Works in favor of the five directors to be selected as aforesaid; that as regards the then present board of directors of the said Works the said Edison agreed that he would exert his best efforts to procure the immediate resignation of two of the number thereof, and to have chosen in their place two members who should be selected by your orator, and that as regards the selection of directors for the said Works, the said agreement should continue so long as both of the parties thereto should severally own at least one-fifth of the nominal capital stock thereof, and that should either of the parties thereto cease to own at least one-fifth of the capital stock of either of the corporations as aforesaid the said agreement should thereupon cease so far as it related to either or both of the said corporations, as the case might be, which said agreement in writing was executed in two parts, one of which is in the possession of your orator, ready to be produced and proved when and where this Honorable Court may direct, and to which your orator begs leave to refer for greater certainty should it be necessary hereafter so to do.

15. And your orator further shows and charges the fact to be that the said last mentioned agreements was a valuable and substantial consideration to your orator for its entering into the said agreements with the said Works and the said Edison United Phonograph Company, more particularly hereinbefore set forth, and for the transfer by it to the said Edison United Phonograph Company of its right, title and interest in and to the letters patent and inventions and applications therefor in the said agreements mentioned and described, and was in effect a part thereof, and that your orator would not have entered into the said agreements had it not been for the making of the said agreement between your orator and the said Edison and your orator's belief that the said Edison would in good faith perform and cause to be performed the terms thereof.

16. That simultaneously with the making of the said four agreements last above set forth, your orator subscribed and paid for and received, the fourteen hundred and forty shares of the capital stock of the said Works of the par value of one hundred and forty-four thousand dollars, so held and owned by it as aforesaid and shows and charges the fact to be that said subscription to and payment for the said stock was secured by the promise of the said Edison to enter into the agreement last above set out and to faithfully perform the same, and that your orator would not have subscribed for or paid for the said stock if the said agreement had not been made and your orator had not believed that the said Edison would in good faith per-

and cause to be performed the terms thereof.

17. That in or about the year 1894 the said Edison sold all of his shares of stock in the said Edison United Phonograph Company, and since that time had had no interest whatever in the said company.

2 18. That in or about the year ¹⁸⁹⁴ hundred and eighty-eight the said Works purchased a large tract of land in the City of Orange, in the County of Essex and State of New Jersey, and erected thereon large factories and equipped the same with machinery necessary for the manufacture of phonographs and graphophones and the devices and supplies connected therewith, pursuant to the requirements of the license agreement made between it and the said Edison on or about the twelfth day of May, eighteen hundred and eighty-eight, and your orator is informed and believes and therefore charges the fact to be true that the cost of the said land, buildings, machinery and equipment was in excess of the sum of four hundred and fifty thousand dollars and that the said plant thus acquired by the said Works was well adapted to the purpose for which it was intended to be used.

19. That after the erection and equipment of the said plant the said Works entered upon the manufacture of phonographs, graphophones and other sound reproducing machines, and the devices, appliances and supplies connected therewith and necessary therefor, pursuant to the terms of the said licensing agreement of May twelfth, eighteen hundred and eighty-eight, and in the year eighteen hundred and ninety also entered upon the manufacture of similar machines, de-

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vices, appliances and supplies pursuant to the terms of the license agreement made between it and the said Edison United Phonograph Company on or about the eleventh day of March, eighteen hundred and ninety, and has continued to manufacture the said machines, devices and supplies, except that for the reasons hereinafter set forth it no longer manufactures the records used in sound reproducing machines or the wax required for the cylinders thereof. That until in or about the year eighteen hundred and ninety-six the business of the said Works was of small volume and was carried on without any considerable profit, and at times even at a loss. That the small volume of the business carried on by the said Works during the said years was due to the fact that sound reproducing machines had not then come into general use, and had not been applied to commercial uses, although efforts were being made to create a popular demand for the said machines, to have them applied to commercial uses, and to secure a much larger sale of them. That in or shortly prior to the year 1896 it became apparent that the efforts made to create a large and profitable market for sound reproducing machines and their growing popularity and the new uses to which they were then beginning to be put would shortly result in a great expansion of the business of manufacturing and selling such machines, and would render their manufacture and sale extremely profitable, and that the said Edison by reason of his familiarity with the affairs of the said Works and the development of the industry in which it was engaged clearly foresaw that a large increase was about to come in the business of the said Works, and the large profits which it should and would naturally derive therefrom, and thereupon in violation of the trust relations which he sustained with your orator and the other stockholders

his benefit and under his control fraudulently conceived the purpose and plan of forming a corporation to which should be diverted the profits which naturally and properly would accrue and belong to the said Works from the conduct of its said business, and thereupon caused and procured to be formed a corporation under the name of the "National Phonograph Company" for the sole purpose of carrying out his said fraudulent design and plan and of effecting the said breach of trust.

20. That the said National Phonograph Company was formed on or about the twenty-seventh day of January, eighteen hundred and ninety-six, by the filing of a certificate of incorporation in the office of the Secretary of State of the State of New Jersey on the said last mentioned day, under and by virtue of the provisions of an Act of the Legislature of the State of New Jersey entitled "An Act concerning corporations," Approved April 7, 1875, and the several supplements thereto, for the purposes in said certificate mentioned, that is to say:- to engage in the manufacture and sale of phonographs and phonograph appliances and supplies, to purchase and sell the stock of other corporations, to purchase patents, claims and debts, to purchase lands, buildings and machinery, to erect buildings and to carry on a general manufacturing business; that the total authorized capital stock of the said last mentioned company as provided for in its said certificate of incorporation was ten thousand dollars, divided into one hundred shares of the par value of one hundred dollars each, and that the names and residences of the stockholders named in and who executed the said certificate

and the number of shares subscribed by each, are as follows:-
George H. Lambert, Newark, New Jersey, eight shares;
Frances B. Stewart, Newark, New Jersey, one share, and
Joseph K. Franks, Newark, New Jersey, one share, to which
said certificates of incorporation or the record or a
certified copy thereof, your orator begs leave to refer
for greater certainty should it be necessary hereafter so to
do.

21. And your orator further shows and charges
the fact to be that the said incorporators of the said
National Phonograph Company were either partners or employes
of the personal counsel of the said Edison, and in the
formation of the said company acted as the agents and
representatives of the said Edison and solely under his
direction and control, and that all of the capital stock
of the said company, except the shares necessary to qualify
its directors, was issued to the said Edison, and ever since
has been and now is owned by him, and that by reason of the
ownership of all, or substantially all, of the capital
stock of the said Company, the said Edison has since its
incorporation nominated and selected and still nominates
and selects all of its officers and directors, and controls
the direction and operations of the said company, and is
entitled to receive and does receive all, or substantially
all, of the profits derived by it.

22. That since in or about the year 1896 there
has been a great demand for the machines manufactured by
the said Works and the devices, appliances and supplies used
in connection therewith and necessary therefor, which demand

has been due in part to the fact that the said machines have during the said period been adapted and applied to commercial uses, and other uses not contemplated until shortly prior to the beginning of the said period, and that if the said Works had during the said period been operated and managed for the benefit of its stockholders very large profits would have been received by them from its earnings, but that in pursuance of his said fraudulent design the said Edison has ever since the incorporation of the said National Phonograph Company been, and still is, operating and controlling the said Works so as to divert to the said National Phonograph Company a large part of the profits which would otherwise have been derived by the said Works, and which would have resulted to the benefit of your orator and the other stockholders therein other than the said Edison. That this result has been accomplished by the said Edison accepting from the said National Phonograph Company on behalf of the said Works, orders for phonographs, graphophones and other sound producing machines, and the devices and supplies connected therewith and necessary therefor, in very large quantities and to such an extent as to practically absorb the entire output of the factories of the said Works at prices less than the prevailing wholesale market prices of such articles, and much smaller than the said Works is entitled to receive and would have received therefor under and pursuant to the terms of the license agreements aforesaid, and at much less than the said machines, devices and supplies could have been sold for to other persons and corporations. That the said orders have been accepted to an extent which has made it in-

possible for the said Works to fill orders for any other person or corporation than the said National Phonograph Company, except to a small extent and after great delay, and that the prices at which the said orders have been and are being accepted from and filled for the said National Phonograph Company by the said Works are so low as to leave but little profit to the said Works, and to enable the said National Phonograph Company to sell the same at prices which secure for it very large profits. That in many instances the prices charged the said National Phonograph Company by the said Works for the machines and supplies manufactured for it have been much smaller than the prices charged the said Edison United Phonograph Company and other customers of the said Works for similar articles, and that because of the fact that the entire capacity of the factories of the said Works has been used to fill the orders of the said National Phonograph Company the said Works has been required to refuse to receive, and for a long period of time has refused to receive; the orders of the said Edison United Phonograph Company and other persons and corporations for similar machines and supplies at prices in excess of those charged by it to the said National Phonograph Company, and that as a cover or excuse for refusing to fill the said orders of the said Edison United Phonograph Company and of other corporations and persons at the prices charged the said National Phonograph Company, the said Edison has caused it to be stated by the said Works that the orders received from the National Phonograph Company were so large that the latter was entitled to have them

fil led at much smaller prices than those charged the other customers of the said Works; that as a result of this conduct the said Edison United Phonograph Company and other corporations and persons engaged in the sale of the said sound reproducing machines have been unable to secure such machines and supplies from the said Works except at prices in excess of those at which similar articles manufactured for the National Phonograph Company by the said Works were being sold by the said National Phonograph Company in the open market, and that the said persons and corporations have for a long time been required to purchase the machines and supplies required by them from the said National Phonograph Company at prices which netted to the said National Phonograph Company sums largely in excess of those required to be paid by it to the said Works for the same articles.

23. That in and by the said license agreements of the twelfth of May, eighteen hundred and eighty-eight, and the eleventh of March, eighteen hundred and ninety, the said Works is entitled and has the exclusive right to manufacture not only sound reproducing machines but all of the appliances and supplies used in connection with or necessary therefor which cannot be purchased in the open market, and that the said Works is equipped and has the facilities for the profitable manufacture of such appliances and supplies; that among the said appliances and supplies not purchasable in the open market, and which are ordinarily manufactured by corporations or persons engaged in the manufacture or sale of sound reproducing machines, are the records used in such machines and the wax from which the cylinders

of the said machines are made, and that prior to the year eighteen hundred and ninety-six the said records and wax were manufactured by the said Works in large quantities at a substantial profit. That shortly after the incorporation of the said National Phonograph Company the said Edison in further pursuance of his said fraudulent purpose and plan caused the said Works to discontinue the manufacture of the said records and of the wax for the said cylinders, and has ever since caused the said records to be manufactured by the said National Phonograph Company, and has caused the said Works to purchase large quantities of the said records from that Company at prices largely in excess of the cost of manufacture, and has directed all of the persons or corporations applying to it for such records to purchase the same from the said National Phonograph Company, and has in this way caused a very considerable profit which properly belonged to the said Works to be received by the said National Phonograph Company. That during the same period the said Edison has caused the wax required for the cylinders of the machines manufactured by the said Works to be manufactured by the Edison Manufacturing Company, a corporation formed by and under the direction of the said Edison in further pursuance of his said fraudulent design, all of the stock of which is owned or controlled by the said Edison, and has during the said period caused the said Works to purchase large quantities of wax required by it for the said cylinders from the said Edison Manufacturing Company at prices in excess of the cost of manufacture.

and has in this way caused the profits which it would otherwise have been entitled to receive to be acquired by the said Edison Manufacturing Company and to be paid to him as the owner of all, or substantially all, of its capital stock.

34. That ever since the making of the said agreement of March seventh, eighteen hundred and ninety, between your orator and the said Edison (being the agreement last above set forth) the said Edison and your orator have each owned and do each now own at least one-fifth of the nominal capital stock of the said Works; that the outstanding capital stock of the said Works has never exceeded six hundred thousand dollars, and consists of six thousand shares of the par value of one hundred dollars each, which your orator is informed and believes are now owned as follows:

Thomas A. Edison of which 1195,60/100 shares are held in trust for said Thomas A. Edison by the Mercantile Trust Company, a corporation organized under the laws of New York, pursuant to the provisions of the said agreement of May twelfth, eighteen hundred and eighty-eight.	3421.81/100 shares.	
International Graphophone Co.	1440	"
Mrs. Thomas A. Edison	456.75/100	"
Charles Bacheller	348744/100	"
Henry B. Amhincloss	250	"
J. F. Randolph	10	"
W. E. Gilmors	165	"
Oliver Wells	5	"
George N. Morison	5	"

25. That pursuant to the provisions of the agreement between your orator and the said Edison, and forthwith upon the making thereof, two persons were selected by your orator as its representatives on the Board of Directors of the said Works and elected members of the said Board, and three other persons selected by and to represent the said Edison were then also elected members of the said Board, and that such representation in the board of directors of the said Works selected by and representing your orator were John E. Searles, who was then the president of your orators and J. T. McChesney, each of whom then held five shares of the capital stock of the said Works; that on or about the eighteenth day of December, nineteen hundred and three, the shares of stock in the said Works owned by the said Searles and McChesney were sold and transferred by them to Stephen E. Moriarty and Oliver J. Wells, and that thereupon and on or about the said last mentioned day, your orator by a letter addressed and sent to the said Works informed it of the transfer of the said shares from the said McChesney and Searles to the said Moriarty and Wells, and advised the said Works that the said Moriarty and Wells had been chosen by it to represent it on its board of directors and requested it to transfer the shares theretofore held by the said McChesney and Searles to the said Moriarty and Wells and to call a meeting of its stockholders, and elect the said Moriarty and Wells members of the said board of directors; that the officers of the said Works thereupon transferred to the said Wells and Moriarty the shares of stock theretofore held by the said Searles and McChesney

respectively, but refused to comply with the request of your orator to call a meeting of its stockholders or to elect the said Wells and Moriarty members of its board of directors; that thereafter, and on or about the eleventh day of February, nineteen hundred and four, the said shares of stock so transferred as aforesaid to the said Moriarty were transferred by him to G. N. Morison, who then was and still is the secretary of your orator, and that on the said last mentioned day, by a letter addressed and mailed by your orator to the said Works on that day notified the said Works that the said Morison and the said Wells had been elected and appointed by it to represent it upon the board of directors of the said Works; that the said Morison had been appointed in place of the said Moriarty, and that it desired the officers of the said Works to call a meeting of the stockholders thereof so that the said Morison and Wells could be elected members of its Board of Directors. That thereafter and on or about the twenty-third day of February, nineteen hundred and four, the officers of the said Works transferred the said shares of stock standing in the name of the said Moriarty to the said Morison, but refused and have ever since refused to call a meeting of the stockholders of the said Works for the purpose of electing the said Morison and Wells members of its board of directors, and your orator charges that the refusal of the officers of the said Works to call the said meeting has been caused by and is due solely to the acts and directions of the said Morison, and that the said Morison has refused and still does refuse to vote for the

said Morrison or the said Wells, or either of them, or for any other persons as directors of the said Works, if they be selected by your orator.

26. That thereafter, and on or about the twenty-seventh day of April, one thousand nine hundred and four, your orator by a letter addressed and mailed on that date to the said Works requested it to notify your orator of the time and place of the next annual meeting of the stockholders and also to give it some assurance that the said Edison would fulfill his said agreement with your orator of March eleventh, eighteen hundred and ninety, and elect the said Wells and the said Morrison members of the board of directors of the said Works, and that on or about the fourth day of May, nineteen hundred and four, your orator was advised by John F. Randolph, the Secretary of the said Works, that the annual meeting of the stockholders of the said Works as fixed by the by-laws should have been held on the second day of May, nineteen hundred and four, and that as that time had passed a special meeting would have to be called, and that the officers of the said Works have ever since refused to call a meeting of the stockholders of the said Works or to elect directors in the places of the said McChesney and Searles, and that the said Edison has refused and still refuses to elect any directors to represent your orator on the board of directors of the said Works.

27. That in and by the by-laws of the said

Works adopted at the time of its organization, and which are still in force, it is provided that the business and affairs of the said Works shall be managed by a board of five directors who shall be elected annually by the stockholders at their annual meeting, to be held on the first Monday of May in each year, and that special meetings of the said Works may be called at any time by order of the president or on the request of three directors; that by the sale and transfer of the shares of stock in the said company formerly owned by the said Saurles and McGhesney they severally ceased to be stockholders in the said company and members of the board of directors thereof; that the board of directors of said company is now and since the eighteenth day of December, nineteen hundred and three, has been composed of only three instead of five members, that is to say, of the said Thomas A. Edison, William K. Gilmore, and John F. Randolph, and that the said Gilmore and Randolph are entirely controlled by and are acting and have acted under the sole direction and control of the said Edison, and not as independent members of the said board of directors, and that your orator is unable to call or procure the calling of a meeting of the stockholders of the said company for the purpose of electing a new board of directors.

29. That your orator is entirely without information as to the financial condition of the said Works or the value of its stock holdings therein, and that on divers occasions and particularly in the month of February,

1904, it has endeavored to secure information regarding the affairs and condition of the said Works, and for this purpose through the president of your orator on or about the 17th day of February, 1904, made a request and demand upon the said Works and the said Edison for information as to the affairs of the said Works and the condition of its business and finances, and also for an opportunity to inspect and examine the plant and the books, papers and documents of the said Works; that such request and demand were made at the Works of the said company on the day last aforesaid by Oliver J. Wells, the president of your orator, and himself a stockholder in the said Works; that the said Wells attempted at that time to make the demand in person upon the said Edison, but that the said Edison after learning of the object of the visit of the said Wells refused to see him, or to comply with such request or demand, and that the said Wells thereupon made the said demand and request upon the said Gilmore, who was the general manager of the said Works, and at that time in charge of its plant, books and other property, subject only to the control of the said Edison, and that the said Gilmore thereupon declined and refused to comply with the said request and demand without giving any other excuse or reason therefor than that he did so by the direction of the said Edison, and that the said Gilmore then further informed the said Wells that neither he nor any one else representing your orator would be permitted to examine the said plant or any of the books or accounts of the said Works, and would not be given any

information relating to the affairs, condition or finances that the said Works and its officers have at all times since the making of the said request and demand, and although the same have frequently been renewed, refused to give your orator permission to examine its plant, books or accounts or any information relating to its affairs, condition and finances.

29. That the said Thomas Alva Edison and John F. Randolph and William K. Gilmore have each been members of the board of directors of the said Works continuously since the month of May, eighteen hundred and ninety-six and have since the month of December, nineteen hundred and three, constituted the board of directors of the said Works, and that since the month of May, eighteen hundred and ninety-six, the said Edison has been the president of the said Works, and the said Randolph the secretary and treasurer thereof, and the said Gilmore the manager of the factories of the said Works, and that the said Randolph and Gilmore have at all times while acting as officers and directors of the said Works been entirely subject to the control and dictation of the said Edison, and have with the said Edison managed its affairs as directed by him and with the sole purpose of serving the interests of the said Edison to the injury of the other stockholders in the said Works.

30. That the said Edison, Gilmore and Randolph have for several years also constituted the entire board of directors of the said National Phonograph Company and of the said Edison Manufacturing Company; that the said Edison is the president of the said National Phonograph Company and the said Randolph is the secretary and treasurer thereof, and also the secretary and treasurer of the said Edison Manufacturing Company; that the said Gilmore is the vice-president of the said National Phonograph Company and the president of the said Edison Manufacturing Company, and that the said Randolph and Gilmore, while acting as officers and directors of the said companies, have at all times been entirely subject to the control and direction of the said Edison.

31. That the preservation of the assets of the said Works and the prevention of the further waste thereof, and the wrongful diversion of the profits to be derived from its business, and the preservation of its books, records and papers, which contains evidence of the wrongful doings of the said Edison, Gilmore and Randolph hereinbefore recited, and the means of following and recovering the profits which the said Works has heretofore been wrongfully deprived of, requires the immediate appointment of one or more persons as the receiver or receivers of the said Works.

WHEREFORE, as your orator is remediless except as your Honor may grant suitable relief by injunction or otherwise, including the appointment of a receiver or receivers for the said Works with authority to sue for, and by other legal proceedings to recover, regain and preserve the assets and profits of the said Works so wrongfully diverted as aforesaid, and which legal proceedings for such recovery can be maintained only by and in the name of the said Works, or by a receiver or receivers duly appointed for that purpose, it prays equitable relief as follows:-

1. That the said Thomas Alva Edison, John F. Randolph, William F. Gilmore, National Phonograph Company, Edison Phonograph Works, and Edison Manufacturing Company, and each of them, may answer this bill of complaint and each and every matter therein contained, but without oath, which is hereby waived.

2. That a receiver or receivers may be appointed to take charge of and preserve and protect the assets,

books, papers, accounts and business of the said Edison Phonograph Works, to carry on its business, and under the direction of the court to endeavor to collect such of its moneys and other assets as have been wrongfully diverted therefrom as hereinbefore more particularly set forth.

3. That the said Edison, Randolph, Gilmore Edison Phonograph Works and National Phonograph Company may make discovery of the moneys, assets and profits of the said Edison Phonograph Works wrongfully diverted to the said National Phonograph Company as hereinbefore more particularly set forth.

4. That the said Edison, Randolph, Gilmore Edison Phonograph Works, and Edison Manufacturing Company may make discovery of the moneys, assets and profits of the said Edison Phonograph Works wrongfully diverted to the said Edison Manufacturing Company.

5. That the said Edison, Randolph, Gilmore, Edison Phonograph Works, National Phonograph Company and Edison Manufacturing Company, or such of them as have knowledge thereof, make discovery of the following particulars:

(a) Of the number of shares of the capital stock of the National Phonograph Company heretofore issued and now outstanding, and the names and holdings of the respective holders thereof, and who are the true owners thereof.

(b) Of the number of shares of the capital stock of the Edison Manufacturing Company heretofore issued

and now outstanding, and the names and holdings of the respective holders thereof, and who are the true owners thereof.

(c) Of the assets and property now belonging to the said Edison Phonograph Works and its liabilities.

(d) Of the receipts, disbursements and profits of the said Edison Phonograph Works prior to the incorporation of the National Phonograph Company and the prices for which the several articles manufactured by it were during the said time respectively sold and the profits thereon respectively.

(e) Of the receipts, disbursements and profits of the said Edison Phonograph Works after the incorporation of the National Phonograph Company and the prices for which the several articles manufactured by it were during the said time respectively sold and the profits thereon respectively.

(f) Of the orders received and accepted from time to time by the said Edison Phonograph Works from the said National Phonograph Company, and of the prices and terms upon which said orders were received, accepted and filled, and of the cost of filling the said respective orders based upon the cost of labor, materials and general expenses of the business, and the profits if any upon said orders respectively over and above such cost.

(g) Of such orders as have been received by the said Edison Phonograph Works since the incorporation of the said National Phonograph Company from other persons

or corporations, and whether the same have been accepted or declined by the said Edison Phonograph Works, and upon what terms and conditions (especially as to the price and time of delivery) the said orders were severally based.

6. That an order may be made requiring the production of the books, accounts and papers of the said Edison Phonograph Works, the said National Phonograph Company and the said Edison Manufacturing Company, including the minute books, stock ledgers, transfer books and books of account of each of the said corporations, so far as they relate to transactions hereinbefore referred to, and that your orator have leave to inspect the same and to take copies thereof.

7. That an order may be made requiring the said Edison, Randolph, Gilmore and Edison Phonograph Works to render a just and true account of the financial transactions and dealings of the said Edison Phonograph Works since the incorporation of the said National Phonograph Company.

8. That a decree may be made, ordering and requiring the payment by the said Edison, Gilmore, Randolph National Phonograph Company and Edison Manufacturing Company, or one or more of them to the said Edison Phonograph Works, or to a receiver or receivers to be appointed therefor, of all the profits and moneys which have been improperly or wrongfully diverted from the said Edison Phonograph Works by the said Edison, Gilmore, Randolph, National Phonograph Company and Edison Manufacturing Com-

pany, or any or either of them.

9. That an injunction do issue restraining the said Edison, Randolph, Gilmore, National Phonograph Company, Edison Manufacturing Company and Edison Phonograph Works, and each of them, and all officers, agents and attorneys of the said Edison Phonograph Works, National Phonograph Company and Edison Manufacturing Company from removing, destroying, tampering with or disposing of the documents, records, contracts, obligations, books, accounts or papers belonging to or in the possession or control of either of the said corporations, or in the possession or control of any of their officers, agents and attorneys, relating to the business or affairs of any of the said corporations, and also restraining them, and each of them, from further diverting any of the profits or moneys properly belonging or to belong to the said Edison Phonograph Works to the said Edison, National Phonograph Company, and Edison Manufacturing Company, or any other person or corporation, and restraining them and each of them from causing, promoting or assisting any such diversion of profits.

10. That your orator may have such other and further relief in the premises as may be equitable and just.

May it please your Honor the premises considered to grant unto your orator not only the State's writ of injunction as hereinbefore prayed, but also the State's writ of subpoena issuing out of and under the seal of your

Honorable Court to be directed to the said Thomas Alva Edison, John F. Randolph, William E. Gilsore, Edison Phonograph Works, National Phonograph Company, and Edison Manufacturing Company, commanding them and each of them by a certain day and under a certain penalty therein to be expressed to be and appear before your Honor in this Honorable Court then and there to answer all and singular the premises, and to stand to, abide by and perform such further decree therein as to, your Honor shall seem meet and as shall be agreeable to equity and good conscience

And your orator as in duty bound will ever
pray, &c.

Lindabury, Denue & Faulks,
Solicitor for and of counsel with Complainant.

3

IN CHANCERY OF NEW JERSEY.

Between	:	
The International Graphophone	:	
Company,	:	
Complainant,	:	
and	:	On Bill etc.
Thomas A. Edison, and others,	:	ANSWER.
Defendants.	:	

The several Answer of Thomas A. Edison, to the Bill of Complaint of the International Graphophone Company, Complainant.

This defendant, to so much of said bill and such parts thereof as he is advised it is material or necessary for him to make answer unto, answering says:

I. Defendant admits that the complainant, the International Graphophone Company, is a company organized and existing under the laws of the State of New York, with its principal place of business in the Borough of Manhattan, County and State of New York, and that it is a stockholder of record in the Edison Phonograph Works (referred to in the bill of complaint and herein as the "Works"), a corporation organized and existing under the laws of the State of New Jersey; but whether complainant, under its charter and organization, is possessed of the numerous and comprehensive corporate powers set forth and claimed in paragraph 1 of the bill of complaint, defendant is not informed; and defendant leaves complainant to make such proof thereof as it may be advised is material.

II. Defendant admits that complainant is now the ostensible holder of 1430 shares of the capital stock of the

Edison Phonograph Works, that said shares stand in its name on the books of said Works and have so stood since about the month of March, 1890; but defendant is not informed whether it was within the corporate powers of complainant to purchase, hold or own said stock; and defendant leaves complainant to make such proof thereof as it may be advised is material. Defendant, however, is informed and believes that complainant is no longer either the virtual or beneficial owner of said stock; and that whatever its ownership in said stock may be, it is at most but nominal.

III. Defendant admits the allegations contained in paragraph 3 of the bill of complaint.

IV. This defendant admits the allegations contained in paragraph 4 of the bill of complaint, in so far as said allegations relate to the organization of the Edison Phonograph Company, its purpose of organization, its corporate powers, the persons by whom said corporation was organized, and the respective holdings of said persons; but defendant denies that the associated stockholders Tomlinson, Tate, Gilliland and Inull, were wholly under this defendant's direction and control, or that they were without any personal or financial interest in the said Edison Phonograph Company.

V. Defendant admits that on or about the 28th day of October, 1887, a contract was entered into between himself and said the Edison Phonograph Company, as alleged in paragraph 5 of the bill of complaint, whereby there was granted to this defendant the exclusive right, authority and license to manufacture the various inventions covered by such letters patent and applications therefor as were then owned or as were thereafter to be owned by said company, and that thereby

this defendant became vested with a license right to manufacture the phonograph and certain appliances therefor under the terms and conditions therein specified.

VI. This defendant admits the allegations contained in paragraph 6 of the bill of complaint, in so far as the same relate to the organization of the Edison Phonograph Works, its purpose of organization, its corporate powers, and the persons by whom said corporation was organized; but defendant denies that the associated stockholders, Batchelor, Tomlinson and Tate, were wholly under this defendant's direction and control or that they were without any personal or financial interest in the said Edison Phonograph Works.

VII. Defendant admits the allegations contained in paragraph 7 of the bill of complaint, except in so far as undue or improper influence on his part is imputed by the statements therein contained; and that, as stated in paragraph 7,

"said Edison agreed to give and did thereby give to the said Works the exclusive right, authority and license under each and every the letters patent and applications therefor under which a license has been granted to him by the said Edison Phonograph Company, pursuant to the provisions of the said agreement made between them on the 28th day of October, 1887, to manufacture the inventions therein severally described, and agreed that he would give and grant to the said Works a similar license under each and every the letters patent upon inventions under which he might receive or be entitled to receive a license to manufacture pursuant to the said last-mentioned agreement, and did further agree to give, and he thereby did give, to the said Works the exclusive right, authority

and license to manufacture phonographs and the supplies necessary therefor for export and use in foreign countries it being therein recited to be the intention to confer upon the said Works the same right and license under the patents owned or to be owned by the said Edison Phonograph Company as were conferred by the said last-mentioned company upon the said Edison, and the same right to manufacture phonographs and supplies for export and use in foreign countries as were conferred upon the said Edison by contract between him and the said Gouraud hereinbefore referred to, and the said Works did thereby on its part agree with the said Edison that it would forthwith equip and erect a factory suitable for the manufacture of phonographs and the supplies necessary therefor and capable of supplying the demands of the said Edison Phonograph Company and that it would promptly meet and fill all the orders of the said company and would deliver to it or to such persons as it might direct, for sale within the United States of America and the Dominion of Canada, all phonographs and supplies so ordered at the actual cost of manufacture thereof plus twenty per cent. of such cost, the cost of manufacture being defined to include cost of labor, material and general expense."

VIII. Defendant admits the allegations contained in paragraph 8 of the bill of complaint, except in so far as undue or improper influence on his part is imputed by the statements therein contained, and except in so far as the allegations of said paragraph charge that all acts and doings of said Works, from and at all times since March, 1890, have been at the procurement and under the sole direction and control of this defendant.

Defendant admits that since March, 1890, he has at all times exercised a general control over the affairs of the Edison Phonograph Works, but he alleges that the affairs, acts and doings of the said Works have, nevertheless, been legitimately directed and administered by the Board of Directors and executive officers of said company.

And defendant further says that from the month of March, 1890, to December 10, 1905, all of the affairs, acts and doings of said Phonograph Works were administered with the specific knowledge and assistance of two directors, in said Board, who, during all such period, were acting as representatives of the International Graphophone Company, complainant herein.

IX. Defendant admits the allegations contained in paragraph 9 of the bill of complaint, in so far as said allegations relate to the organization of the Edison United Phonograph Company and the general purposes of its organization; but defendant is not informed whether said company, as so organized, possessed the corporate powers stated in the allegations of said bill of complaint; and he leaves complainant to make such proof thereof as it may be advised is material.

X. Defendant admits the allegations contained in paragraph 10 of the bill of complaint, save and excepting the allegation that the Edison United Phonograph Company did confer "upon the said Works the right and license to manufacture all of the phonographs, graphophones, phonograph-graphophones, and supplies covered by the said letters patent, applications, and inventions." Defendant admits that, by the several agreements therein referred to, it was the purpose of said the Edison United Phonograph Company to confer upon said the Edison

Phonograph Works the general right to manufacture phonographs, graphophones and supplies therefor. But defendant says that it was not the purpose of said agreements to confer the right, exclusive or otherwise, to manufacture phonograph records.

XI. Defendant admits the allegations contained in paragraph 11 of the bill of complaint, excepting as such allegations contain an inference that, in the contract between Thomas A. Edison and the Edison United Phonograph Company of March 11, 1890, there was reserved to the said Edison a manufacturing right, exclusive or otherwise, which he might or was expected to transfer to the Edison Phonograph Works to make phonograph records. Defendant avers that, in and by other parts of said contract than those quoted by complainant in the allegations of paragraph 11 of the bill of complaint, the right to manufacture phonograph records was specifically reserved, by said the Edison United Phonograph Company, from said Edison, in words and terms as follows:

"Nothing herein contained shall prevent the purchasing, acquiring, selling or using, by the second party or by its licensees, of phonograms or instrumental or vocal records made on phonogram blanks by the use of a phonograph or phonographs."

And defendant prays leave to refer to said agreement for greater certainty, should it be necessary hereafter so to do.

XII. Defendant admits the allegations contained in paragraph 12 of the bill of complaint, excepting as such allegations contain an inference that, in the contract between the International Graphophone Company and the Edison United Phonograph Company, of March 11, 1890, there was reserved to the

former company, or that there was an intention on the part of the parties to confer upon the Edison Phonograph Works the right, exclusive or otherwise, to manufacture phonograph records. Defendant avers that, in and by other parts of said contract than those quoted or paraphrased by complainant in the allegations of paragraph 12 of the bill of complaint, the right to manufacture phonograph records was specifically reserved, by said the Edison United Phonograph Company, from said International Graphophone Company in words and terms as follows:

"Nothing herein contained shall prevent the purchasing, acquiring, selling or using, by the second party, or by its licensees, of phonograms or instrumental or vocal records made on phonogram blanks by the use of a phonograph or phonographs."

And defendant prays leave to refer to said agreement for greater certainty, should it be necessary hereafter so to do.

XIII. Defendant admits that on or about the 11th day of March, 1890, a license agreement was entered into by and between said the Edison United Phonograph Company, party of the first part, and the said Works, party of the second part, and that said agreement contained the various paragraphs and parts recited in paragraph 13 of the bill of complaint; but defendant says that by said license, no right, exclusive or otherwise, to manufacture phonograph records was conferred upon said the Edison Phonograph Works by said the Edison United Phonograph Company.

XIV. Defendant admits the allegations contained in paragraph 14 of the bill of complaint, but defendant begs leave to refer for greater certainty to the contract between said

Edison and the International Graphophone Company, dated March 11, 1890, should it be necessary hereafter so to do.

XV and XVI. Defendant has no knowledge or information sufficient to form a belief whether, as stated in the bill of complaint, said agreement between said Edison and said the International Graphophone Company of March 11, 1890, set forth and referred to in paragraphs 14, 15 and 16 of said bill, was regarded by complainant as a valuable and substantial consideration for its entering into the said agreements dated March 11, 1890 with the Edison Phonograph Works and the said Edison United Phonograph Company, and for the transfer by complainant to said Edison United Phonograph Company of its right, title and interest in and to the various letters patent, inventions and patent applications referred to in the said agreements; and defendant leaves complainant to make such proof thereof as it may be advised is material. But defendant says that however said contract of March 11, 1890 may have been regarded by complainant, or whether as a valuable and substantial consideration for its entering into said agreements of March 11, 1890, is wholly immaterial to the validity of said last-named agreements, for the reason that said contracts, by apt terms, express considerations that are in themselves adequate and complete. And defendant further says that said contract between said Edison and said the International Graphophone Company dated March 11, 1890, was not entered into upon or for any other or different consideration than that which is therein expressed. Defendant, however, says that the International Graphophone Company did not, on or about March 11, 1890, subscribe for the 1440 shares of stock of said Works, as alleged in paragraph 16 of the bill of

complaint. The facts are, as defendant believes, that said International Graphophone Company did subscribe for and receive 520 such shares, and that it did receive 920 shares for and in consideration of certain machinery and tools which proved to be of but small value to said Edison Phonograph Works.

XVII. Defendant admits that in or about the year 1894 he sold all of his shares of stock in the said Edison United Phonograph Company, as stated in paragraph 17 of the bill of complaint, and that since that time he has had no interest whatever in said company; and defendant says that by the sale of his said stock he thereby sacrificed his entire interest in all of his foreign patents relating to phonographs, excepting in Canada, and that this action was forced upon him by reason of the incompetent management of said Edison United Phonograph Company and particularly because of a business policy which, from his previous unfortunate experience in this country, he well knew must prove ineffective and abortive and which must result only in the ultimate failure of said Edison United Phonograph Company. Such action, however, was only taken by defendant after an earnest endeavor on the part of himself and his foreign partner, Gouraud, to bring about such a change of management as in their opinion was required for the successful continuance and promotion of such business. Defendant further says that after numerous protests by himself and said Gouraud as to the ineffective business methods of said company, suit was brought in the Chancery Court of New Jersey by himself and said Gouraud against said Edison United Phonograph Company, et al., as appears from the reported cases in Chancery, 7 Dick. 520-527 (May Term, 1894); but that they were unable by said suit to obtain redress, it having

been there held that since the directors of said Edison United Phonograph Company had kept within the scope of their powers and had acted in good faith and with honest motives, however ineffective, erroneous and mistaken, their acts were not subject to judicial control or revision, and that if complainants, Edison and Gouraud, were dissatisfied, the only redress or remedy open to them was the election of a new board of directors, or the selling of their stock and their withdrawal from the corporation. And defendant says that it was upon this ruling that he sold his said stock in said Edison United Phonograph Company and withdrew therefrom.

XVIII. Defendant admits that a factory was built and equipped by and for said the Edison Phonograph Works, at West Orange, County of Essex, State of New Jersey, in the year 1888, as alleged in paragraph 18 of the bill of complaint; but defendant denies that the cost of said factory, land, buildings, machinery and equipment had a value of four hundred and fifty thousand dollars, or, that, in the year 1888, the value thereof exceeded one hundred and eighty thousand dollars.

XIX. Defendant admits that, after the erection and equipment of its manufacturing plant said Works entered upon the manufacture of phonographs, devices, appliances and supplies connected therewith, pursuant to the terms of said license agreement of May 12, 1888; and that, in the year 1890 and thereafter, said Works continued upon the manufacture of similar machines, devices and appliances under the terms of the license agreement between said Works and the Edison United Phonograph Company, dated March 11, 1890, and that said Works thereafter continued to manufacture said machines, devices and

supplies; but defendant denies that said Works ever built graphophones or other sound-producing machines than phonographs or devices and appliances appurtenant thereto, as alleged in the bill of complaint; and he further denies that said Works ever acquired or attempted to acquire the right, exclusive or otherwise, to manufacture phonograph records for use in sound-producing machines, or the wax required for the cylinders thereof. Defendant admits that said Works did, at the request of the North American Phonograph Company and the Edison United Phonograph Company, at times manufacture such records, but only at the request of said companies; and he further says that the right to manufacture phonograph records was claimed by and reserved to the North American Phonograph Company, as owner of the stock of the Edison Phonograph Company, and to its licensees for the United States and Canada, and by the Edison United Company for all other countries, and that, as a rule, the manufacturing of such records subsequent to March 11, 1890, until 1896, was done independently of said Works by said North American Company and its licensees, and at all times after March 11, 1890 by said the Edison United Company and its licensees; and that such right was conceded to said North American Company and its licensees by said Edison Phonograph Works, with the full knowledge and consent of its board of directors, two of whom were members thereof as representatives of said International Graphophone Company. And defendant says that prior to 1896 said North American Company, the Edison United Phonograph Company and their licensees made great numbers of phonograph records independently of said Works.

Defendant further says that the charges of fraud and

unfair dealing alleged against him in paragraph 19 and elsewhere throughout the bill of complaint are preposterous and unfounded; that at all times defendant has done his utmost to further the welfare and prosperity of said Works; that from the time of its organization, through the long period of its misfortunes and insolvency he expended more than two hundred thousand dollars in its support and maintenance, for which he has received and can expect to receive no substantial return; and that if said Works were now deprived of the phonograph business that said National Company has found for it to do, the value of its bonds and capital stock would be wholly destroyed.

Defendant says: The right to exploit, rent and sell the phonograph, in the United States and Canada, was sold by him, in 1888, by the sale of his stock in the Edison Phonograph Company, to one Jesse H. Lippincott, who had already acquired from the American Graphophones Company the exclusive right to likewise exploit, rent and sell the graphophone, a modified form of phonograph. That the purpose of said Lippincott was to impartially present to the public defendant's phonograph and the graphophone through sub-companies which should act as sub-licensees of a parent company then yet to be formed. That, pursuant to such plan, the North American parent company was forthwith organized, as were numerous sub-companies; and with capitalizations aggregating nearly thirty million dollars. But that defendant had no part or hand in the organizing, capitalizing or exploiting of these companies, nor in the business policy of the Lippincott plan except as he was closely occupied in attempting to improve and manufacture the apparatus, and if possible to make profitable the exclusive manufacturing rights that had been conferred upon the Edison

Phonograph Works. That, upon the equipment of a plant at a cost of about one hundred and eighty thousand dollars, said Works entered upon the manufacture of phonographs pursuant to the terms of said license agreement and so continued during the existence of the North American Company, or until 1896. That, at the organization of said Works, its capital stock was three hundred thousand dollars, although the capitalization was increased about March 10, 1890, to six hundred thousand dollars, as stated in paragraph 6 of the bill of complaint; and that between 1888 and 1896, several thousand phonographs were manufactured for the North American and the Edison United Phonograph Companies, but only at a large loss to said Works. That in the beginning, defendant believed the Lippincott plans to be feasible and that a large and profitable business would be created for said Works; but that, as is usual in adapting new machines to particular uses, changes and additions were required, until only after some four years of experimentation and experimental manufacturing, was a satisfactory form of phonograph developed. That during such period of change and improvement, between the years 1889 and 1893, many expensive tools for its manufacture were made and discarded; and many other expenses were incurred in standardizing and bringing the phonograph to its then expensive form; and thereby, ^{and by} reason of the failure of the North American Company to meet its obligations and to pay for apparatus which said Works had manufactured for it, said Works became hopelessly insolvent prior to 1893. That, in 1893, said Works still owed defendant about three hundred and twenty thousand dollars for money advanced to it, notwithstanding that in January, 1893, defendant had accepted North American Company's bonds, dollar for dollar, for money advanced to said Works to the extent of

one hundred and forty-six thousand dollars. That in these transactions defendant sustained very large losses. That, from the North American bonds, aforesaid, he realized only a dividend of about eighteen per cent., which was awarded him in his purchase of the North American Company's assets for the National Phonograph Company; nor during the three years prior to August, 1897, was defendant's claim against said Works for the three hundred or more thousand dollars for money advanced, as aforesaid, available as an asset, or of more than nominal value. That among the many losses sustained by said Works, from its transactions with the North American Company, was a claim for two hundred and ninety-one thousand dollars for apparatus manufactured, for which said Works received in settlement but the one hundred and forty-six thousand dollars' worth of North American bonds, as aforesaid. That up to 1896, the business of said Works, notwithstanding defendant's efforts to make it a success, and the large losses he had sustained, had proved a failure throughout. That in 1894 the phonograph possessed substantially all of the qualities of modern machines, as a recorder and reproducer of sound; but it had not been sufficiently cheapened to be made accessible to the public as an amusement apparatus; nor had a popular demand for it as an amusement apparatus been created; nor had it proved a commercial success for dictation purposes, or as a substitute for stenographers, for which it was originally intended, or in any sense as a commercial apparatus. But defendant says that from 1890 the phonograph had been extensively used as a commercial apparatus; and defendant, therefore, denies the allegations of the bill, that, up to 1896, the phonograph had not been applied to commercial uses, or that it had

not been widely adopted; the facts being that the uses to which it had been applied prior to 1896 were essentially commercial in character, and that it had failed as a commercial apparatus. That when brought out in 1889 and 1890, the phonograph gave substantial promise of success; but the amount of business, which was at first large, rapidly fell away, even though the machine was as rapidly being perfected, until, in 1893, its failure, under the Lippincott plan, became inevitable; although, at the request of others and to save the Lippincott undertaking if possible, defendant then accepted the presidency of the North American Company, and, under a modified plan of conducting the business, did what he could to avert its downfall. And defendant says that such downfall was hastened, if not caused, by the American Graphophone Company, which upon the insolvency and death of Lippincott, in May, 1892, abrogated its contract with the latter, pirated the inventions and improvements which defendant had made exclusively for the phonograph, and went into the field as an independent competitor, upon a basis of reduced prices and with an aggression that made impossible a continuance of the talking-machine business under the conditions and prices contemplated by the North American licenses. That the cost of phonographs when sold to the public under the Lippincott plan was about one hundred and fifty dollars each, while customers were required to pay a rental of forty dollars per year for those that were leased; whereas, by reason of the competition which the National Company has met, its three most popular forms of machine are sold outright to the public for ten, twenty and thirty dollars, respectively, while none are leased. That the North American Company was placed in the hands of a receiver August 21, 1894, and its assets sold to the National

Phonograph Company, through defendant, on or about February 8, 1896, shortly after the latter's organization; and that, thereupon, said National Company proceeded, as owner of the Edison patents and of others thereafter purchased, to build up a phonograph business throughout the United States and Canada upon substantially the lines that had been adopted by said the American Graphophone Company. That practically no phonographs were manufactured for said the North American Company, by said Works, after 1893; nor was the manufacture of phonographic apparatus resumed for said National Company in any substantial quantity until 1897, and then only in a small way. Nor had it, in 1896, as is alleged in the bill of complaint, become apparent that the success of the phonograph business was assured, nor was such success assured before about 1899. Although, during the insolvency period of the North American Company, as stated in paragraph 22 herein, considerable orders for phonographs were received by said Works, and filled for the Edison United Company for its foreign trade, but in no such quantities as to constitute an adequate business for said Works. That, during such period, however, defendant found or created for said Works an amount of profitable business entirely aside from phonographs or phonographic devices, for which, between February 28, 1894 and February 29, 1904, said Works was paid over nine hundred thousand dollars; and that it was chiefly through such business that, for the three years prior to 1897, said Works was enabled to survive as a going concern. That said Works was at all times insolvent between about 1892 and August, 1897; and was then only rendered solvent by the issue of its bonds to the amount of three hundred thousand dollars, which were given defendant in exchange for demand notes, to a like amount, which had been given

him for money advanced to said Works. That, at all times during said period, if defendant had demanded payment of said notes, the entire assets of said Works must have been sold to satisfy such claims. But defendant says that, instead of foreclosing his said claims, as he might have done, he has sought to sustain said Works as a going concern, and has, at all times, done his utmost to save, maintain and make profitable the business of said Works. And defendant says that the North American Company, the previous owner of said Edison patents, having become insolvent and unable to continue the phonograph business, it became necessary to organize a new company to take up such work; and that, but for some such company, the Edison Phonograph Works would have lost the entire benefit of its manufacturing license under said patents. Defendant further says that said Edison Phonograph Works had no license beyond that of a manufacturing right and that it had never acquired the right to use, lease or sell phonographs or phonograph appliances or to otherwise exploit the phonograph business, as the bill of complaint implies; and that said Phonograph Works could by no possibility have been deprived of any of its rights so long as the new owners of the Edison patents delegated to said Works the work of manufacturing under those patents to which said manufacturing license applied.

Defendant further says that the manufacturing of phonographic records would have been given to said Works, in 1897, even though said Works had no such manufacturing right, had the art of making such records been so perfected as to have rendered their manufacture profitable to said Works. Defendant says that when the National Phonograph Company began making records in 1897, he was attempting to cheapen the process

of their manufacture by moulding great numbers of duplicates from a single master record; but that such process, satisfactory as it has since proved, was not satisfactorily developed, in a commercial sense, until about 1901, and that during the preceding four years a large amount of experimentation and experimental manufacturing had been necessary, all of which ^{he} had anticipated; and being mindful of the large losses said Works had sustained in its part in the development of the phonograph in the years 1889-1893, defendant would not allow said Works to undertake the manufacture of phonograph records upon such terms and for such remuneration as were prescribed by its said manufacturing license. Defendant further says that said Works was not equipped for experimental work, and that it has never undertaken such work, nor under its said manufacturing license was it obligated to manufacture apparatus that had not been definitely standardized and reduced to a definite manufacturing basis. And defendant says that in the development of the moulded record and the process of its manufacture, said National Company accumulated a large experimental and manufacturing plant for such purposes, and that thereafter it would have been disadvantageous to both of said companies, if not wholly impracticable, to have transferred such plant and business from the National Phonograph Company to said Works. And defendant says that, in the absence of any license right on the part of said Works in that behalf, and the inconvenience and difficulty which would have attended the transferring of the work of record making from the National Company to said Works, such manufacturing was, with the full knowledge and acquiescence of the directors, John E. Searles and J. T. McChesney, who were then members of the Board of said Works as repre-

representatives of said International Graphophone Company, left undisturbed in the hands of said National Company.

XX. Defendant admits that said National Phonograph Company was organized January 27, 1896, to engage in the manufacture and sale of phonographs and appurtenant apparatus and devices, as stated in paragraph 20 of the bill of complaint; and that its capital stock of ten thousand dollars was divided into shares of one hundred dollars each, and that certain of its shares were issued to persons in amounts as therein stated.

XXI. Defendant denies that at the time of its organization all of the capital stock of the National Phonograph Company "except the shares necessary to qualify its directors, were issued to himself, "and ever since has been and now is owned by him". Defendant, however, says that upon the failure of the North American Phonograph Company and the sale of its assets, the reorganization and rebuilding of the phonograph business devolved wholly upon himself, and that, but for his efforts in this behalf, the manufacturing rights of the Edison Phonograph Works would have been wholly lost to that company. That if the Edison patents had been purchased at the sale of the North American Company's assets by its chief competitor then in the talking-machine field—the American Graphophone Company—only graphophones would thereafter have been manufactured by said company and thereby the further manufacture of the phonograph would have been suppressed, and said Works would have been deprived of all further opportunity to manufacture phonographs under its said

manufacturing rights. And defendant further says that he does not own any part of the capital stock of said National Phonograph Company; nor has he at any time since the organization of said company in 1896 controlled or directed its operation and management further than to put forth his utmost endeavor to improve the phonograph as a scientific apparatus and to enhance and improve its marketable qualities; nor has it been his policy to undertake the management or control of companies organized for the exploitation and sale of his inventions; nor has he done so except in special instances where he could not escape the assumption of such duties. Defendant has never been an officer of the National Phonograph Company, as alleged in the bill of complaint; and but defendant believes that said company has been well, efficiently managed, although he has but a limited knowledge of the details of its business affairs.

XXII. Defendant admits that, since 1896, a large business in the manufacture and sale of phonographs and phonograph supplies has been developed; but he denies that in 1896 any such large demand for phonographs or phonographic devices had been created, or that any such large business existed prior to about the year 1899; and he again denies, as he has already done in paragraph 19 of this answer, that any such large demand or business was or at any time has been due to the adaptation of the phonograph to "commercial uses", as stated in paragraph 22 of the bill of complaint. And defendant denies that said Works has at any time been managed otherwise than for the best interests of all of its stockholders; and he denies that, since the incorporation of

the National Phonograph Company, said Works has been so operated "as to divert to the said National Phonograph Company a large part", or any part whatever, of the profits which should "have been derived by the said Works".

Defendant admits that large orders for the manufacture of phonographs and appurtenant devices have been and are now being received by said Works from the National Phonograph Company; but defendant denies that the filling of such orders has been unprofitable to said Works, or, that thereby said Works has been prevented from accepting and filling other orders from which larger profits would have been derived. On the contrary, defendant says that at no time has said Works been able to secure other equally advantageous orders. Defendant prior to 1896 and from that date to the present time has found, created and given to said Works much other business from which large profits have been derived by said Works; but defendant says the material prosperity which said Works now enjoys as a manufacturing concern has been almost wholly due to the large business created by said the National Company, and that but for the large orders thus received from said National Company, said Works would have continued in the insolvent and moribund condition to which it had fallen in 1896. And defendant says that while the factories of said Works were thus supplied with large and profitable orders for the manufacture of phonographs and appurtenant devices, to the extent of its manufacturing facilities, none of this work has been done at a price less than said Works was entitled to receive and would have received therefor under and pursuant to the terms of its said license agreements, namely, its license agreements with the North

American Phonograph Company and with the Edison United Phonograph Company. That up to March 1, 1904 and thereafter, said Works received from said the National Company for all apparatus manufactured by the former for the latter, the cost of labor and material together with the allowance contemplated in said contracts for general expenses, to which was added, for all the period between 1896 and March 1, 1904, an average profit bonus of substantially twenty per cent. upon the cost of all such labor and material; but while such bonus averaged about twenty per cent. between 1896 and March 1, 1904, such bonus was reduced to fifteen per cent. for the years ending March 1, 1901 and 1902, and to eighteen and one-half per cent. for the year ending March 1, 1903, and again to fifteen per cent. for the year ending March 1, 1904. But defendant says that all such reduced profit bonuses, prior to December 18, 1903, were paid and received with the knowledge of, and without objection on the part of John E. Searles and J. T. McChesney, who were, and for several years had been continuously directors of said Works, as representatives of complainant herein; and defendant says that such profit bonus was so reduced and accepted by said Works for reasons as follows: That when the phonograph business was resumed by the National Phonograph Company in 1896, after the failure of the North American Company and the sale of its assets, it became obvious that the phonograph must be wholly reconstructed and so cheapened as to be made accessible to the public as an amusement apparatus; that to this end a large investment in special tools for its manufacture became necessary; that it was incumbent on said Works to provide itself with all such tools, special or otherwise, without charge either to the North

American Company, or to the purchaser of the North American rights, or to the Edison United Phonograph Company; but that said Works was wholly without the necessary means for undertaking such work, it then being in debt to this defendant for more than three hundred thousand dollars, for money advanced. And that, to meet the necessities of the case, said the National Phonograph Company and the Edison United Company together expended about sixty-five thousand dollars for the construction of such special tools as a preliminary to the manufacture of the several types of phonographs which have since been manufactured by said Works and sold by or through said National Company. That the cost of such special tools would have been far less than became necessary if a single type or form of phonograph could have satisfied the requirements of the phonograph business; but that to meet the competition of other concerns than in the talking-machine field, several sizes and types of machine became indispensable to a successful prosecution of the phonograph business. And defendant says that over fifty-three thousand dollars of the sixty-five thousand dollars so expended for special tools was contributed by the said National Phonograph Company, and the balance of over eleven thousand dollars of said amount by said the Edison United Phonograph Company. And defendant believed, and still believes, that it was but just that said companies should be recouped, in part at least, for such outlays by a reduction of the amount which said Works would otherwise have been entitled to receive from its profit bonus of twenty per cent.

And defendant further says that in the reconstruction of the phonograph to meet the requirements of competition in the talking-machine business, as aforesaid, and in so cheapening its manufacture as to make it accessible to the public as an

inexpensive amusement apparatus, there have been added to such machines and to devices appurtenant thereto, since 1896, numerous important improvements, of his own invention and of the invention of others, which have been purchased by and which belong wholly and exclusively to said the National Phonograph Company. Defendant says that, by and under its said license agreements, said Works acquired no right, exclusive or otherwise, to manufacture such improvements as have been invented by defendant, or as have been purchased by him from others, or which have been purchased from him or from others by the National Phonograph Company since the receiver's sale of the North American Company's assets, namely, since February 8, 1896. And defendant believed, and still believes, that, respecting the great number of phonograph devices manufactured for said National Phonograph Company by said Works wherein were included improvements constituting large and material parts of such structures, said the National Company, as exclusive owner of such improvements, thereby became entitled to a reasonable reduction of the amount which said Works would otherwise have been entitled to receive from said profit bonus of twenty per cent.

And defendant further says that, to meet meet the competition of other concerns in the talking-machine field, it had become necessary to the success of the National Phonograph Company's business to so far reduce the price of phonographs to the public that there was but a small margin of profit after deducting the cost of manufacture and selling commissions; and that to meet such competition it was the privilege of said Works to agree to and accept such reductions from the said profit bonus of twenty per cent. as might

be necessary to encourage the construction of the cheaper forms of phonographs, which, otherwise, said the National Company might have found it impossible or inexpedient to put upon the market.

Defendant denies that he has, in any instance, caused or attempted to cause said Works to refuse other manufacturing orders than those of the National Phonograph Company, where such orders would have been profitable or advantageous to said Works; nor, in accepting manufacturing orders, has said Works in any manner discriminated against the Edison United Phonograph Company. Nor has said Works at any time refused to fill orders for said Edison United Phonograph Company, notwithstanding the fact that by reason of the small number of machines which it required for its foreign trade, such orders were often unremunerative and wholly unprofitable to said Works when filled at the prices for which such machines were built in large quantities for said the National Phonograph Company. Defendant, however, is informed and believes that said Edison United Phonograph Company has from time to time given orders for the manufacture of phonographs to others than said Works, and that much of the business to which said Works was entitled under its contract with said company has been diverted from it. And defendant further says that, owing to the failure of the Edison United Company to maintain its patent rights in foreign countries by the payment of annual and other taxes and by working the inventions, as required by the laws of the various countries in which such patents were granted, most of its said patents long since became forfeited and lost to their said owner; and that by the failure of said company to maintain its said patents in force and assert its rights against infringers,

under such patents as had not become so forfeited, its territory has been invaded by many infringers and competitors, and that thereby said Works has been deprived of large gains and profits which, otherwise, it would have derived. But while said Works has in no case refused to fill orders of said Edison United Phonograph Company for phonographs or phonographic apparatus at prices for which such apparatus was supplied to the National Phonograph Company, defendant says that said Works would have been justified in charging said Edison United Company a materially larger price for such machines, from the fact that many important improvements, exclusively owned by said the National Company, were embraced in their construction; that such machines could not have been built for said Edison United Company without infringing many patents exclusively owned by the National Company to which the license of said Works did not apply; and that it was only by the courtesy of said National Company that said Works was permitted to manufacture such apparatus for said Edison United Company.

Defendant says that during the period between the years 1890 and 1900, said Works manufactured phonographs and phonograph supplies for said Edison United Phonograph Company in considerable quantities, and that in the aggregate said Works received therefor \$306,867.82, but that with the exception of the two years ending respectively, February 28, 1894 and February 28, 1899, such orders as were received and filled, were received with great irregularity and were small, and that such business was undesirable, if not wholly unprofitable to said Works. That, for the year ending February 28, 1894, said Works received for work done for said

Edison United Company \$94,134.07, and for the year ending February 28, 1899, \$112,121.18; but, for the year ending February 28, 1898, the amount received was but \$8,219.94, while that received for the year ending February 28, 1900 was but \$15,650.60. That since February 28, 1900, little or no manufacturing has been done by said Works for said Edison United Phonograph Company, because said Company either did no business, or because it employed other manufacturers to supply its orders; and defendant further says that said Edison United Company is now defunct, and has been since March 31, 1904, when its charter was forfeited for non-payment of its corporate taxes to the State of New Jersey, and for various other acts and omissions which were inconsistent with the maintenance of its corporate organization and existence. And defendant denies that said Edison United Phonograph Company, or others acting for it, have at any time bought phonographs or phonographic apparatus from said the National Phonograph Company, at prices exceeding those for which such apparatus was sold in the general market; and he denies that said Edison United Company, or others for it, have, in good faith, attempted to buy, under any such conditions, any such apparatus from said National Company.

XXIII. Defendant admits that by and under the said license agreements of May 12, 1888 and March 11, 1890, referred to in paragraph 23 of the bill of complaint herein, the Edison Phonograph Works did acquire an exclusive right to manufacture phonographs and certain phonographic appliances and supplies, and that said Works is equipped with suitable

appliances for the profitable manufacture of such apparatus. But defendant denies that said Works required or ever attempted to acquire the right, exclusive or otherwise, to manufacture phonographic records, so-called, or the wax from which such records are made. On the contrary, and as is more fully stated in paragraphs 10, 11, 12, 13, and 19 herein, defendant says that the right to manufacture phonograph records was specifically reserved to the licensee companies, the North American Phonograph Company and the Edison United Company, and to their sub-licensees, while the wax of which such records are made is manufactured by a special process to which the manufacturing rights of said Works did not and do not appertain or apply. And defendant denies that he, or any one in his behalf, "had caused the said Works to purchase large quantities of the said records from that company [the National] at prices largely in excess of the cost of manufacture"; nor has said Works had occasion to, nor has it purchased, of said National Company, phonograph records in quantities, large or small, or at a price excessive or otherwise. Defendant further says that all such wax as was made for the use of the Edison Phonograph Works, the North American Company, its licensees, and their customers, and for the Edison United Phonograph Company, its licensees and their customers was, during the period from 1888 to 1896, manufactured by said the Edison Manufacturing Company; and that no such wax, during such period, was manufactured by said Works. But defendant says that, from some time in 1896 and thereafter, all such wax was manufactured by said Edison Phonograph Works; and that all of the wax used by the National Phonograph Company, in its business of record making, from the organization of said company in 1896 to the present

time has been made by said Works and sold by it to said National Company, and at an average net profit to said Works of more than twenty per cent. And defendant further says that the manufacture of all such wax by the Edison Manufacturing Company, between March, 1890 and 1896, and all wax thereafter manufactured by said Works was made with the knowledge and acquiescence of the two persons, who, as representatives of said International Graphophone Company, were, until December 18, 1903, members of the Board of Directors of said Works, as aforesaid; and that prior to March, 1890, the making of such wax by the Edison Manufacturing Company was an established practice. And defendant further says that in 1896 such wax making was transferred from the Edison Manufacturing Company and was taken up by said Works because the factory of said Edison Manufacturing Company was not conveniently accessible to said Works or to the offices of the National Phonograph Company; and because said company had been organized chiefly as a selling company, and was not conveniently equipped for such work; and, further, because, after 1896, it was assumed that a degree of privacy which it was desirable to maintain in this branch of the business could be as well observed at said Works as at the factory of said Edison Manufacturing Company, and at a material saving in the cost of manufacture. That during the experimental period in the development of the process of such wax making, the manufacture of such wax was delegated to said Edison Manufacturing Company chiefly because it was assumed that, by reason of the isolated location of said company's works, the privacy of such process might be more securely guarded

against
disclosure to competing concerns.
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Defendant further says that said Edison Manufacturing Company was organized in connection with and to exploit his moving-picture inventions and other inventions which were wholly unrelated to the phonograph or phonographic appliances, and that the operations of that company have, from the time of its organization, been confined to such other business, except as it did manufacture such wax for phonograph blanks and records up to 1896, as aforesaid. But defendant says the manufacture of such company's moving-picture and other apparatus has been chiefly given to and done by said Edison Phonograph Works, and at prices which have netted much larger profits to said Works than said Edison Manufacturing Company has derived from the making of such wax.

Defendant further says that said National Company would, itself, be entitled to make the wax for all records which it manufactures, and that said National Company would have made and would now make its own wax for all such records, but for the desire on the part of said company to avoid all manufacturing that could or may be delegated to said Works.

XXIV. Defendant admits that, as shown by the books of the Edison Phonograph Works, the stock of said Works is held in amounts and by holders as stated in paragraph 24 of the bill of complaint, except that the holdings of the International Graphophone Company and of Charles Batchelor, as appears from said books, are 1430 and 248 44/100 shares, respectively. But as defendant is informed, and being so informed believes, said International Graphophone Company is no longer the lawful, actual or virtual owner of said 1430 shares of stock, or of one-fifth of the entire stock of said

Works or of any considerable part of said stock; and defendant asks that complainant be required to make strict proof as to its present and past ownership of said stock, and to whom it now is or has been hypothecated, and to whom and for what amount of money it now is, or has been during the past two years, pledged as collateral.

XXV. Defendant admits that pursuant to the agreement between himself and the International Graphophone Company, particularly referred to in paragraph 14 of the bill of complaint, two persons were forthwith selected, upon the execution of said agreement, by said company as its representatives on the Board of Directors of said Works, and that they were forthwith elected members of said Board, as were three other persons who had been likewise selected by defendant; but defendant denies that such persons, selected as aforesaid by the International Graphophone Company, as its representatives upon the Board of Directors of said Works, were John R. Searles, then and thereafter until about December 18, 1903, president of said International Graphophone Company, and J. T. McChesney; but defendant admits that said Searles and McChesney were so elected, in 1897, to represent said International Graphophone Company on the Board of said Works, and that they so continued as such directors and representatives until about December 18, 1903; that upon the retirement of said Searles and McChesney from said Board, on or about December 18, 1903, said the International Graphophone Company suggested and requested that Stephen F. Moriarity and Oliver J. Wells be elected to said vacancies; that shortly thereafter the name of said Moriarity was withdrawn, for which

was substituted that of G. N. Morrison, who was then and still is secretary of said International Graphophone Company; and defendant admits that he has refused to aid in or give countenance to the election of said Moriarity, Wells or Morrison to the Board of Directors of said Works, and this notwithstanding his said agreement with the International Graphophone Company that, so long as each should remain the owner of a one-fifth part of the capital stock of said Works, three of its five directors should be of his own selection and the other two of the selection of said company; and defendant says he still refuses to aid in, vote for or countenance the election to said Board of said Morrison or said Wells, or either of them, or for any other persons as directors of said Works if they be selected by said International Graphophone Company, and will so refuse so long as the present attitude of those in control of said last-named company towards said Works shall continue. Defendant is informed and believes that the present attitude of said International Graphophone Company and of those related to its affairs is hostile not only to himself but to the success of said Works, and that the best interests of said Works would not be subserved by the election of said Morrison and Wells to its Board of Directors; that said persons would be wholly incompetent to assist in directing the affairs of said Works; that they have no material interest in the welfare of said Works, and, as defendant believes, their election to said Board is now sought for no other or better purpose than to interfere with the legitimate affairs of said Works and to embarrass, annoy and create discord among its officers and employees. And defendant says that if he were to support the

election of said Morrison and Wells, such action would be contrary to his best judgment, since, by so doing, as he believes, he would cause material injury, not only to his holdings in said Works, but as well to those of all the other stockholders. And defendant further says that there are other stockholders than himself, who, under the circumstances, now object to the appointment of directors to the Board of said Works as representatives of said International Graphophone Company; and that as an officer, stockholder and director of said Works he cannot ignore the wishes of such other stockholders in this behalf.

And defendant is advised and believes that said agreement of March 11, 1890 is illegal and against public policy in so far as it would require him, against his best judgment as a stockholder, director and officer of said Works, to vote for or support the election of any person or persons to its said Board of Directors, whose presence or influence would be inimical or prejudicial to the best interests of all of its stockholders. And defendant is advised and believes that said agreement is illegal and against public policy in that it would require the parties thereto, while holding but a part of the shares of said Works, to elect and control its entire Board of Directors, regardless of the wishes and desires of the holders of the other shares of the stock of said company.

XXVI. Defendant asks that his foregoing answer to paragraph 25 of the bill of complaint be received as his answer to the allegations of paragraph 26 thereof.

XXVII. Defendant admits that under the by-laws of said Works, it is provided that there shall be elected at the annual meeting in May or each year, five directors, and that since the resignations of said Searles and Mc Chesney, said Board has been composed of but three directors instead of five; but he says that such vacancies have thus far been allowed to continue because of his reluctance to advocate the election of others than nominees of said the International Graphophone Company in pursuance of the terms of his said agreement with that company, of March 11, 1890. Defendant admits that he is a large stockholder in the Edison Phonograph Works, and that he is entitled to and does control the management of its affairs, but he denies that such control is or has been exercised otherwise than for the benefit and best interests of all of its stockholders; or that any injury has arisen or is likely to arise by reason of the existing vacancies in the Board of said Works.

XXVIII. Defendant is informed and believes that Mr. Oliver J. Wells some time during the month of February, 1904, made certain demands upon William M. Gilmore, general manager of said Works, for information respecting its business affairs, and that, at such time, he sought to inspect and examine the books, papers and documents of said Works; but, as defendant is informed and believes, said Gilmore did not represent to said Wells that, by the direction of this defendant, he was denied such information or access to the books, papers and documents of said Works. Defendant is informed and believes that said Wells was informed by said Gilmore that before complying with his said requests and demands he, Gilmore, wished to obtain the advice of counsel;

that thereupon Mr. John R. Hardin was consulted, who advised that, under the circumstances, of the case, said Wells was entitled to inspect only the stock and transfer books of said Works and none of its other books and papers; and that upon such advice said Wells was immediately given access to said books.

XXIX. For answer to the allegations of paragraph 29 of the bill of complaint, except as to so much of said allegations as may be admitted as true, defendant begs leave to refer to his answer to paragraph 27 thereof. But defendant denies that said Gilmore and Randolph have at all times, or at all, while acting as officers and directors of said Works, been entirely subject to the control or dictation of this defendant, or that they have managed, or that they have been called upon to manage the affairs of said Works with the sole purpose of serving the interests of this defendant or to the injury of the other stockholders in said Works, or that they have been called upon to otherwise manage or direct the affairs of said Works than would subserve the best interests of all of its stockholders.

XXX. Defendant denies the allegation of paragraph 30 of the bill of complaint, "That the said Edison, Gilmore and Randolph have for several years constituted the entire board of directors of the said National Company", in so far as said allegation refers to himself as a director of said company; and defendant denies that he is or has been president of said National Company. Defendant says that William E. Gilmore is and has, at all times since about 1898, been president of said National Phonograph Company, and not vice

president, as stated in the bill of complaint; and that, as defendant is informed and believes, there is no vice-president of said National Company. Defendant further says that he is and has been president and director of the Edison Manufacturing Company, and not vice-president, and that said Gilmore is and has been vice-president, and not president of said last-mentioned company, as stated in the bill of complaint. And defendant denies that said Gilmore and Randolph, while acting as directors and officers of said National Phonograph Company and of the Edison Manufacturing Company, have at all times, or at all, been entirely subject to the control and direction of this defendant, or that they have been prompted by defendant to do otherwise than would subserve the best interests of all of the stockholders in their management of said companies.

XXXI. Defendant denies that the assets of said Works are in danger of waste, or that any of the profits derived from its business are or have been diverted, or that any of its books, records or papers are in danger of destruction. And defendant says that the appointment of a receiver or receivers, as prayed in the bill of complaint, could but lead to a disorganization and impairment of the successful and profitable business which said Works is now doing, and to the irreparable injury of all of its stockholders and bondholders. Defendant says that said Works has, now issued and outstanding, in the hands of bona fide holders, two hundred and seventy-six five per cent interest-bearing bonds, of a par value of one thousand dollars each, upon all of which interest in full has been regularly paid since August 2,

1897, said bonds having then been issued to defendant in exchange for demand notes which he had received for cash advanced by him to said Works; that said Works has a full-paid capital stock of a par value of six hundred thousand dollars, upon all of which, excepting 1185 60/100 shares held and owned by defendant, dividends, at the rate of five per cent. per annum, have been regularly paid from its earnings since August 2, 1899 to the present time, except that for the period between February 2, 1900 and May 2, 1901, the dividends paid were at the rate of six per cent. per annum; and that under a sinking-fund provision of said bonds, twenty-four such bonds, of the three hundred originally issued, have been retired and canceled from the earnings of said Works. And defendant further says that in addition to such interest, dividend and sinking-fund payments, the working capital and manufacturing facilities of said Works, since January 1, 1898, have been increased from its said net earnings to the extent of nearly four hundred thousand dollars; and that if said Works can be left in the undisturbed control of its business affairs there is no reason apparent why it may not continue to retire its bonds under its sinking-fund provision, to pay in full the interest upon its bonded indebtedness, to pay dividends upon its capital stock equal, at least, to those already paid, and to materially add to its working capital and manufacturing plant. And defendant further says that the future success and prosperity of said Works is threatened only by the hostile and unreasonable attitude of this complainant.

All which matters and things this defendant is ready to aver, maintain and prove as this Honorable Court shall direct;

and he prays to be hence dismissed, with his costs and charges
in this behalf most wrongfully sustained.

Mc Carter Williamson & McArthur
Attorneys for Plaintiff
with Deft's

Feb. 16, 1905.

International Graphophone Company Suit.

Chas. L. Buckingham, Esq.,
38 Park Row,
New York, N.Y.

Dear Mr. Buckingham:-

I have gone over the proposed answer with Mr. Edison and he is very much pleased with the way you have prepared it. He makes two suggestions which you can embody if you think desirable. On page 46 he suggests as an additional ground for complaint against the Edison United Company, that that concern made no effort to maintain its patents by paying taxes or otherwise complying with the requirements concerning working, and therefore practically abandoned its field. On page 58, he suggests also, that it might be stated that the appointment of two directors representing the International Graphophone Company would be objectionable to other stockholders, whose interests he should consult.

As soon as the answer is written out, please send it to me and I will have it executed.

I return herewith the original copy of the answer,

No. 2 - C.L.B.

copy of the bill of complaint, and also the printed volume of contracts with the Edison United Company.

Yours very truly,

F.L.D./ARK.
Encs.

**Legal Department Records
Phonograph - Case Files**

George Croyden Marks v. Pathé Frères

This folder contains material pertaining to the suit brought in France by George Croyden Marks against Pathé Frères (Compagnie Générale des Phonographes, Cinématographes et Appareils de Précision). The case was initiated in 1904 and involved the patents of Fernand Desbrière on molded records. It was a companion suit to *Compagnie Française du Phonographe Edison v. Pathé Frères*. The selected items consist of correspondence from the period 1908-1910 concerning attempts to settle the litigation. Among the items not selected are court documents and correspondence regarding alleged infringement of the Desbrière patents at the Pathé factory. Related material can be found in the archival record group, National Phonograph Company Records.

PRIVATE AND CONFIDENTIAL

TELEPHONE 227-22
227-22



COMPAGNIE GÉNÉRALE

de Fabrication et de Distribution

Société Anonyme au Capital
de 4.400.000 Fr

SIÈGE SOCIAL
99, Rue de Richelieu, 99
PARIS

PARIS 1900
GRANDS PRIX
MILAN 1906
Membre du Jury - Hors Concours

99, Rue de Richelieu,
Paris, le June 1st, 1908



- D. Y. E. R., Esq. -
D. Y. E. R. - ANGE

*Dyer ok
Jal*

Dear Sir,

I have submitted to my colleagues of our Board of Directors the propositions which we discussed together during my visit in New York.

My colleagues would be glad, considering our very important commercial relations in the United States, that the Desbrières lawsuit should cease to exist between us.

We are however placed in a rather awkward position, towards the friendly German houses who are actually combating with chances of success your patent in Germany; for in recognizing your patent, not only do we abandon them, but we furnish you against them a very important trump, in the lawsuit of nullity on the German Patent.

Nevertheless, we esteem that the interest of our Company is not to combat your patent, for an article which will disappear in a short space of time.

We consequently will agree to recognise your patent and be licensed by you until it ends.

As concerns the proposed royalty which it was proposed should commence on the 1st, of August 1909, we should prefer to pay at once a nominal sum and avoid the complications of an account to be kept for the cylinders made and sold.

Basing ourselves on the offer Desbrières made us in his letter and of which I send you copy, we think that the sum of 10,000 Francs could be considered as equitable. We firmly believe that this amount is superior to the one which we should have to pay you with the proposed royalty, during the existence of the cylinder with us.

To conclude, we would accept the following transaction:-
The Desbrières lawsuit would be abandoned each party supporting its own expenses and legal fees.

June 29, 1908.

E. A. Watts, Esq., Managing Director,
Pathé Freres,
98 Rue de Richelieu,
Paris, France.

Dear Sir:

I have your letter of the 1st inst., proposing on behalf of Pathé Freres the settlement of the suit based on the Desbriere patents in France and without prejudicing in any way our rights for the prosecution in Germany of the suits on the corresponding patents, said settlement being the following:

1. Desbriere law-suit in France against Pathé Freres will be abandoned, each party paying its own expenses and legal fees.
2. Pathé Freres will recognize the validity of the Desbriere patents and will be licensed under the patents so long as they shall run.
3. Pathé Freres will pay us the sum of 10,000 Francs in full settlement for all damages for past infringements of said patents and for future royalties thereunder.

In reply I beg to advise you, on behalf of the Edison interests that your proposition is accepted.

I will be much obliged if you will take up this matter with my attorneys in Paris, Messrs. Brandon Bros., 59-Rue de Provence, who will prepare the necessary papers and forward them to me for

6/29/08.

NATIONAL PHONOGRAPH COMPANY

E. A. Batts.

approval.

I am glad that this matter has been disposed of, and hope that the friendly spirit now existing between our two interests will continue.

With assurances of my personal regard, believe me,

Yours very truly,

ELD/IWW

Chairman Executive Committee.

June 29, 1908.

Messrs. Brandon Brothers,
59 Rue de Provence,
Paris, France.

Gentlemen:

In reference to the Desbriere suit, Mr. E. A. Watts, Managing Director of Pathe Freres was in this country recently in connection with moving picture matters, and I proposed to him that the Desbriere litigation might be settled. He has proposed and we have accepted a settlement on the following basis:

1. The Desbriere suit will be abandoned, each party paying its own expenses and legal fees.
2. Pathe Freres will recognize the Desbriere patents and will be licensed thereunder so long as the patents run.
3. Pathe Freres will pay us the sum of 10,000 Francs in full settlement of past damages and for future royalties.

I have suggested to Mr. Watts that he should see you in order that you may prepare the necessary papers to carry this understanding into effect. For my convenience, I will be much obliged if you will draw up the necessary document in both English and French. The settlement I have made is as good as I could expect under the circumstances. The Desbriere suit has always been a great expense and I have felt that the outcome was dubious. Furthermore, it is probable that we will withdraw our manufacturing

2.

6/29/08.

NATIONAL PHONOGRAPH COMPANY

Brandon Bros.

operations in France, and the granting of a license to Pathe will comply with the working requirements and keep the patents in force. The recognition of the patents by Pathe will enable us to proceed more effectively against other infringers. Furthermore, the effect of Pathe recognizing the patents in France will no doubt be helpful to us in Germany.

Your early attention to this matter will be appreciated.

Yours very truly,

FLD/IWW

Chairman Executive Committee.

BRANDON BROTHERS

PATENT OFFICE RB/EB

Telegraphic address: AMICANT-PARIS

WESTERN UNION CODE

TELEPHONE 154-23

Paris, 59, rue de Provence, (IX)

July 7th 1908.

F. L. Dyer Esq.,
National Phonograph Co.,
Orange, N.J.

RECEIVED
JUL 1 1908
FRANK L. DYER

Dear Sir,

MARKS v. PATHE. We are favoured with yours of the 29th ult., and we note its contents. We will act in accordance therewith.

Yours truly,

No ans
Francis Pathe
Francis Pathe 2

BRANDON BROTHERS

Established 1850. HB/AMM.

PATENT LAWYERS

PROTECTION OF INDUSTRIAL PROPERTY

CABLE ADDRESS, "ABDICANT PARIS"

WESTERN UNION CODE

TELEPHONE 154-23

R. B. BRANDON, PROPRIETOR.
D. H. BRANDON, PROPRIETOR.
R. HERRIN, GRADUATE AT LAW
R. H. ROBERTSON, CLERK.
LONDON

59, RUE DE PROVENCE

PARIS. (IX) July 31st, 1908.

Frank L. Dyer, Esq.,

Edison Laboratory,

Orange, N. J.



Dear Sir,

MARKS v. PATHÉ. Mr. Desbrière, to whom we communicated your letter of the 29th of June last seeing that he owns an interest of 10% which has been promised to him by Mr. Marks in any damages to which the Pathé Company may be condemned, has written us a letter dated the 25th inst., of which the following is a translation:-

"I duly received your favour of the 22nd inst., "
"enclosing a letter of Mr. F. L. Dyer dated Orange," "
"June 29th, 1908."

"I wish you would please send to the National Phono- "
"graph Company a literal copy of what follows, and "
"advise me that it has been sent, sending me a trans- "
"lation thereof into English."

"Mr. F. Desbrière regrets that as far as he is con- "
"cerned, he cannot accept the draft of compromise "
"contained in Mr. F. L. Dyer's of June 29th 1908, "
"between the Pathé Co., and the National Phonograph "
"Co., although he holds that his interest is the same "
"as that of the latter Company, who are certainly not "
"exactly posted in regard to the facts relating to "
"the suit which is pending. Mr. F. Desbrière being "
"owner of an eventual right to 10% in the profits re- "
"sulting from any legal proceedings against the Pathé "
"Co., or from any compromise arrived at with this "
"Company, holds that the proposed sum of Fra. 10,000 "
"is absolutely insufficient to indemnify him, by the "
"part thereof which would go to him for the care and "
"attention which he has given to the suit which is "
"pending and the losses which he has incurred owing "
"to the infringement."

"As a matter of fact he had to assign his patents to "

Frank L. Dyer, Esq.

"Mr. G. Croydon Marks for a consideration much lower"
"than their value, owing to this very infringement,"
"and he only consented to do so, owing to the inten-"
"tion, (which was likewise that of Mr. Marks) of ob-"
"taining a compensation by means of the suit which "
"is at present pending."

"Besides, as proposed, the transaction is ~~never~~ "
"inexecutable for the Pathé C^o have infringed the "
"patents of Mr. Desbrière from 1901 to 1903, (date "
"at which they were transferred to Mr. Marks). Now "
"if the Pathé C^o were to admit their validity, Mr. "
"F. Desbrière would become entitled to claim legally "
"an indemnity for the infringement which concerns him "
"alone and which he fixes at France 100,000, at the "
"rate of Frs. 0.10. For each cylinder manufactured, "
"this being the minimum commercial profit illegally "
"charged by the Pathé C^o from 1901 to 1903."

"The sum of Frs. 10, 000. proposed by the Pathé C^o in "
"settlement of past damages, cannot evidently apply "
"to the period when Mr. F. Desbrière was sole owner "
"of his patents, unless it be with his consent. If "
"one considers also this sum as an indemnity for the "
"period extending from 1903 to this date, and for "
"future manufacture, the result is a purely nominal "
"royalty per cylinder considering the number of "
"cylinders manufactured by the Pathé Company and the "
"remaining term (8 years) of the patents of Mr. "
"Desbrière. This annuity (Mr. Desbrière probably "
"means indemnity) thus fixed is of a nature to de- "
"stroy the value of the patents of Mr. Desbrière "
"in Germany far more than to reinforce it, for the "
"judges will understand that this transaction con- "
"stitutes simply an extra-legal and voluntary agreement "
"which is not confirmed or ratified by payments cor- "
"responding to the importance of the business and "
"damages sustained. Furthermore, the Pathé C^o who only "
"undertook the manufacture of discs in order to es- "
"cape the consequence of the pending lawsuit and has "
"not succeeded in such manufacture, will certainly "
"revert, after compromise, to the manufacture of "
"cylinders, and the annuity (Mr. Desbrière probably "
"means indemnity) proposed will become still more out "
"of all proportion."

"This draft of transaction is, besides, irregular as "
"far as concerns Mr. F. Desbrière, owing to the un- "
"dertaking of Mr. G. Croydon-Marks. Mr. F. Desbrière "
"holds a letter from Mr. G. Croydon-Marks authorizing "

Frank L. Dyer, Esq.

"him to start negotiations with a view to a compromise"
"with the Pathé Co., to the exclusion of any other "
"person; the necessary steps have been taken by MF. "
"F. Desbrière, and this he can prove."

"Again, the proposed transaction is without object "
"at the present date, seeing that the experts remain "
"entrusted with the case and their report is to be "
"filed very shortly; the filing of this report should "
"evidently be awaited before any attempt to compro- "
"mise is made. If the report is favourable, we are "
"nearly certain to gain the suit. If it is unfavour- "
"able, Mr. F. Desbrière is sure that the Pathé Co. "
"will only face a public debate of the suit, with him "
"as adversary, if they are absolutely forced to do so. "
"He is too well aware of the financial position of the "
"Company and of its industrial irregularities not to "
"know that oral arguments presented by him personally "
"as he absolutely intends doing, will bring about con- "
"siderable trouble in the situation of the Company. "
"The directors of the Pathé Co. know this perfectly, "
"but the shareholders are not aware up to the present, "
"of the pendency of the present suit. The interests "
"which are at stake are very important, although "
"Mr. Ivatts may pretend to make light of the suit. "
"The experts have, in fact, advised the representatives "
"of the Pathé Co. several times of the danger of their "
"attitude."

"In brief, Mr. Desbrière, by the present, makes re- "
"serves for all his rights, and concludes that the "
"proposed draft of transaction cannot be accepted "
"without modification. In fact, in his opinion, no "
"agreement of any kind should be made at present with "
"the Pathé Co. as this would seriously jeopardize the "
"interests of the plaintiffs."

As desired by Mr. Desbrière we are communicating to you,
~~as desired~~, a translation of his letter, and we are also send-
ing a copy thereof to Mr. Marks in order that he also may be
kept advised of what is taking place, and may take Mr. Desbrière's
statements into consideration.

We shall be pleased to receive your reply as soon as
possible, and meanwhile, remain,

Yours truly,
Frank L. Dyer

*Société pour la Fabrication
d'Appareils perfectionnés de Phonographes.*

34, Rue de Cormille - Le Mans

SEP 5 1906

Louvain-la-Neuve, le 25 August 1908

MARQUE DE FABRIQUE
Déposée



LA BOUCHE D'OR

Exiger la Marque

TRAMWAYS

Madeleine, Le Roule
Gare St Lazare, Levallois
Madeleine, Courbevoie
St Denis - Neuilly

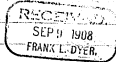
STATION DE COURMELLES - LEVALLOIS

TÉLÉPHONE
N°

private

Mrs. Alca Edison Esq.

Orange



Dear Sir

I beg to inform, as you are perhaps aware of,
that I had in 1899 and 1900 Patents issued for several
records, as manufactured by myself in France.
I sold those Patents to the National Phonograph Co.
and a law action was started against them. It
was in consequence of their Patent, an interest in
that law action being granted to me. I had
much trouble about that law action since
1903, and experts were appointed to elicit a
written report, this report is to be published
in a month or so. I have every reason to
believe that this report is to be favorable
to me, and it is nearly proved, even in France,
that Court's sentence is against expert's advice.
If that report is to be against me, I shall have
no difficulty in obtaining from Court that
no account thereof be taken of it, because in
their impudence with Mr. Brander's Patent agents

RECEIVED SEP 11 1908 FRANK L. DYER.

at Pathe's works myself not being allowed to be present, experts I did not want with the tools they were appointed to use, it was only by my special order that another engineer was appointed for a fresh seizure.

But Pathe will never care to have a public debate with myself again & herein. 1st Because Libellous are heavy; in fact about 50,000,000 would be received have been manufactured in infringement of my ^{own} Patents. 2^d Public and legal opinion is against them, as they are noted to have been conspicuous according to previous and similar debates. 3^d Their financial state is weak and I am quite informed of same.

4th I may report to Court how few would be taken out from your Laboratory. 5th I am able to state also that previous for manufacturing electrical lamps & filaments were taken out to France, as Mr. Gustave had them.

Notwithstanding, I heard very recently that an agreement was to be made between Mr. Frank L. Dyer and Mr. Swatt and that nearly 80,000 money is to come out of it. More than that, no Patent can be recognized as valuable by Pathe paying no royalty for each record made and to be manufactured, under French law. For my part, I cannot accept such an agreement, as I am myself interested in that law & action, according to the very low price I obtained for my Patents. I am obliged to see in that agreement only a bluff from Mr. Swatt, which was not to be accepted as it was. I expect that no such agreement is to be settled till expert's report is published, as Shuggley

Société pour la Fabrication
d'Appareils perfectionnés de Phonographes.

34, Rue de Courmoulin (Port-Saint-Pierre)



Exiger la Marque

TRAMWAYS

Madeline - Le Roule
Gare St-Leger - Lovallois
Madeline - Courbevoie
St Denis - Neuilly

STATION DE COURMOLIN, LEVALLOIS

TELEPHONE

N°

For years with such result is more than
unnecessary, and not worth your achievement
and perhaps mine. Also Pathe started recently
with no success and is only waiting for such
an agreement to return to France manufacturing

Hoping to see you in America,
I am, dear Sir,

Yours faithfully

H. Desbrère

25th - rue de la Perle
France
Neuilly-s-Meines

1

Sept. 10, 1908.

Mr. F. Desbriere,
25 bis Rue de la Ferme,
Neuilly s/ Seine, France.

Dear Mr. Desbriere:

Your letter of the 26th ult. to Mr. Edison has been referred to me. I regret exceedingly that the arrangement which appears to have been made between Mr. Marks and yourself, under which you were to have an interest in the results accruing from the Pathe litigation, were not known either to Mr. Gilmore or myself. If it had been, I would, of course, have consulted you before making any definite offer of settlement with Mr. Ivaats. My own position in the matter is one that cannot be criticised, but nevertheless I regret very much that anything should have been done that might prejudice you. The suit against Pathe seemed to me to be never-ending, although it was a constant source of expense. When in Paris in November of 1904 I was assured that the case would certainly be terminated by the following Summer, but, although almost four years have gone by, the end seemed apparently as far off as then. Furthermore, I have read the arguments at the preliminary hearing and it seemed to me that our case was not particularly strong, and I have therefore always apprehended eventual failure. Under these circumstances, when Mr. Ivaats was in this country last Spring and after discussing the matter with Mr. Gilmore, I suggested the possibility of

F. Desbriere.

(2)

9/10/08.

settling the Pathe litigation. This was done, and I am afraid that, so far as our interests are concerned, we cannot escape from the arrangement, even if we desired to do so. This I could not in good faith do.

So far as your rights are concerned, we are under no legal or moral obligations to carry out the private arrangement made between Mr. Marks and yourself, and my only regret is that I should not have known of that arrangement at the time the negotiations with Mr. Ivaats were being conducted. Mr. Ivaats has in his possession, however, a letter from you in which under date of January 10, 1903, you offered your patents to Pathe Freres for 11,000 francs, so that of course his position is that the arrangement which was reached between us was substantially as favorable as that which you had proposed yourself. Not being familiar with the French law, I cannot determine whether under the arrangement made between Mr. Marks and yourself you could prevent the carrying out of the arrangement reached with Mr. Ivaats in order to protect your interests, but I should be very glad to have you write me fully on this point.

Yours very truly,

FLD/IWW

General Counsel.

Société pour la Fabrication
d'Appareils perfectionnés de Phonographes.

34, Rue de Corneille (Porte-Champerel)

Levallois Perret, le 23 Octobre 1908



Exiger la Marque

TRAMWAYS

Madeline, La Route
Gare St Lazare, Levallois
Madeline, Courbevoie
St Denis, Neuilly

STATION DE COURTEILLES, LEVALLOIS

TELEPHONE
N°

Frank L. Dyer Esq.
Chicago, Ill.

Dear Sir,

In addition to my last letter, I beg to inform
that no settlement of the Debit obligation accepted
by National Phonograph Co. or Mr. Gilson on, at
yourself is of any value as regards French law; it
was only by mistake that I mentioned your
Company in my last letter. So, as your good faith
was abused of by Carter, you remain in full
power to inform them that proposals made in
America being worthless as to stopping your
law action against them in France, they must
be considered as cancelled. I hope that this will
be soon.

I do not know if Mr. Swath received a written
engagement from yourself or Mr. Gilson and
I beg you to inform and let me have a copy.
But even in that case, your engagement will
not stop anything in France or do any harm
to your law action. Thus, nothing is easier than

Handwritten signatures and initials:
Dyer
Carter
Swath
Gilson

to escape from such a settlement, whose value is not
understood by myself, & by the law, in any way, a fresh law
action would be necessary, & I do not see the possibility
of your own.

You told me that the reason to have such a
settlement was that expenses of this last action
seemed very heavy. I should be quite willing to take
charge of them for the future, when report is
published. But, if such an agreement was accepted
by all interested parties and myself, you would
have to allow me 50% of any sums recovered from
Patté by sentence or agreement and engage to help
me by every way in your power and not only in
this law action or settlement in any manner,
unless requested. In any case, I am sure that you
will do your utmost, not to let M. M. Braun see,
M. Legemar, barrister, M. Desjardins, solicitor, all
distinguished and faithful gentlemen, and myself
be ashamed of such an undervalued report.

I am quite sorry to see that your manufacturing
plant in Paris was put with, nothing for 3000 francs
about what costed 30 times more: if I had been entrusted
in time, I would have kept it going at my own expense.
Working results got depressed, only because many
expenses of your other manufactures in France
records made by them were applied to it. I do not believe
that it is possible to manage a business, except and with
them in France without French workmen and clerks, as
working habits here are a very peculiar thing.

Yours faithfully
F. Desbrière

25 rue de la Harpe
Henriette & Marie (France)

(COPY)

Lavallois-Ferret, te 23 October 1908.

Frank L. Dyer Esq
Orange N.J.

Dear Sir,

In addition to my last letter, I beg to inform that no settlement of the Pathe' litigation, accepted by National Phonograph Co. or Mr. Gilmore, or yourself, is of any value as regards French Law. it was only by mistake that I mentioned your Company in my last letter. So, as your good faith was abused of by Pathe', you remain in full power to inform them that proposals made in America being worthless as to stopping your law action against them in France, they must be considered as cancelled: I hope that this will be done.

I donot know if Mr. Ivatt received a written engagement from yourself or Mr. Gilmore and I beg you to inform and let me have a copy: but even in that case, your enlistment will not stop anything in France or do any harm to your law action. Thus, nothing is easier than to escape from such a settlement, whose value is not understood by anybody here: in any case, a fresh law action coming from myself is to prevent any stopping of your one.

You told me kindly that the reason to have such a settlement was that expenses of this law action seemed very heavy. I would be quite willing to take charge of them for the future, when expert's report is published: but, if such an agreement was accepted by all interested partys and myself, you would have to allow me 60% of any sums recovered from Pathe' by sentence or agreement and engage to helpe me by every way in your power and not interfere in this law action or settlement in any manner, unless requested. In any case, I am sure that you will do your utmost not to let M.M.Brandon, Mr. Azermar, barrister, Mr. Donjardin, solicitor, all distinguished

(COPY)

2

and faithful gentlemen, and myself be ashamed of such an undeserved defeat.

I am quite sorry to see that your manufacturing plant in Paris was put out, selling for 3,000 francs about what costed 30 times more. If I had been instructed in time, I would have kept it going at my own expense. Working results of it seemed bad, only because many expenses of your other manufacturs and defected records made by them were applied to it. I donot believe that it is possible to manufacture French records and sell them in France without French workmen and clerks, as having habits here are a very peculiar thing

Yours Faithfully

F. Desbriere

NATIONAL PHONOGRAPH COMPANY

*See
Marks on
Pathe*

Feb. 22, 1910.

G. Croydon Marks, Esq.,
56 & 57 Lincoln's Inn Fields,
London, W. C., England.

Dear Mr. Marks:

I am sending you herewith a copy of all the correspondence relating to the complication in which I find myself on the subject of Mr. Desbriere, and I wish that you would take up this matter from now on so that I may be relieved of the worry of attempting to handle it from this end. I have written Mr. Desbriere to-day that the matter has been placed in your hands, and an answer is still due to his letter of Jan. 17th.

In brief, the situation is due to the fact that I was not advised, nor was anyone here advised, that a private agreement was made between you and Mr. Desbriere under which he was to obtain a part of any recovery secured in the suit against Pathe.

In the Moving Picture business we have been co-operating very closely with Pathe since early in 1908, and our relations in this country are entirely friendly; therefore, when Mr. Charles Pathe and Mr. Ivatts approached me on the subject of compromising the Desbriere litigation I was disposed to do this, because I felt that a prolongation of the lawsuit in

NATIONAL PHONOGRAPH COMPANY

Paris might result in acrimony. I recalled that in 1904 I had been advised by Messrs. Brandon Bros. that the case would soon be terminated and four years later it seemed to be no nearer its end. Furthermore, Pathe Freres had given up the manufacture of cylinder records and were limiting themselves to discs, so that no good would have come by an injunction. Under these circumstances I recommended to Mr. Gilmore that the matter be settled and he approved, and an offer to this effect was made to the Pathe people. As soon as this was done Desbriere immediately called my attention to his agreement with you under which he was to receive a part of the recovery, and I found myself in a bad hole, out of which I have been trying to get for about two years.

I want to do the fair thing by Desbriere, but at the same time cannot, of course, take advantage of the situation so far as Pathe are concerned. I want to make good my promise to them if possible. Even if Desbriere carried on the litigation and made a recovery, I should feel morally bound to turn over to Pathe everything coming from our share over and above the amount proposed in the settlement.

I hope by referring this matter to you that you may be able to make some settlement of it without spending too much of your time, because the Pathe-suit has already been a great expense and we have derived absolutely nothing from it.

If there is any question relating to this situation that you want to ask me about, let me know and I will cheerfully answer.

Yours very truly,

FMD/IWW
Enc-

President.

[FROM RAPHAEL HUNTER BRANDON]

RB/RJ

March 4, 1910

Copy file
W. Dyer
Gec. Croydon Marks Esq.,
18 Southampton Buildings,
L o n d o n, W.C.

Dear Sir,

MARKS v. PATHÉ. We beg to acknowledge receipt of your's of the 2nd inst. containing the copy of a letter of the same date which you have sent to Mr. Desbrière.

We take the opportunity of reminding you that in the event of Mr. Desbrière agreeing to continue the suit at his expense, this will not prevent your being personally condemned jointly with the Edison Company, in the event of the Pathé Co. winning the case, to pay the said Pathé Co. damages, if any damages are allowed. You will kindly bear in mind that the Pathé Co. contend that by your infringement suit and the seizure performed at its Works at Chatou a serious damage has been caused them, they claiming the extravagant sum of 500,000 francs on that score. This is an important point and we take the liberty of calling your attention to it.

In the meantime, we beg to inform you that our avoué has communicated us this morning a pressing letter which he has received from the avoué employed by the Pathé Co. In view of this pressing letter we again take the liberty of urging you to kindly come to a final decision as soon as ever possible.

A carbon copy of this letter is being forwarded to Mr. Dyer.

Yours truly,

Paris 1900
GRAND PRIX

Milan 1905
Membre du Jury-Hors Concours

Phonographes Pathé

ANCIENS ÉTABLISSEMENTS PATHÉ FRÈRES

Roye Saint
98, Rue de Richelieu
PARIS



COMPAGNIE GÉNÉRALE
DES
PHONOGRAPHES
CINÉMATOGRAPHES
APPAREILS PRÉCISION

Société Anonyme au Capital
de 5,000,000 FR.

Adresse Télégraphique
"PATHÉPHONE-PARIS"

TELEPHONE 247-64
247-65

USINE À CHATOU

Vente en Gros:
62, Rue de Richelieu
Vente au Détail:
24 et 26, Boulevard Haussmann
MAGASIN DE DÉPOSÉS

AGENCES GÉNÉRALES:
LONDRES
BRUXELLES
AMSTERDAM
MILAN
VIENNE
MOSCOU
ST-PETERSBOURG
ODERSA
ROSTOFF
ETC. ETC.

3. Paris, le May 27th. 1910

Mr. Frank L. DYER,
President EDISON MANUFACTURING CO.,
ORANGE, N. Y.

Dear Sir,

It is with much pleasure that I beg to confirm the official letter I am sending you by same mail with regard to the Desbrière (Marcks-Edison) difference.

I have not had the least doubt that it is owing to your personal intervention that our Company will see at an end a suit as wearisome as it is fatigous, and I thank you on its behalf as well as on my own.

- Mr. Desbrière proposes and we have accepted:
 - 1°.- Renunciation to the suit brought by Marcks;
 - 2°.- Renunciation to the suit brought by the Compagnie Française Edison;
 - 3°.- To become licensees under the French Desbrière patents up to their expiration.

All of this under very acceptable conditions. The necessary documents to conclude this transaction are in our lawyers' hands and in a few days everything will be settled to our mutual satisfaction.

There remained to be cancelled the agreement passed between us dated June 1908, which is the object of my official letter, and this cancellation will be effected ipso facto upon signing the aforementioned transaction.

I am personally very glad that these difficulties be removed, as our relations will become but more cordial.

Yours faithfully,

Ed. Pathé



COMPAGNIE GÉNÉRALE
de Patentes et de Fabrication

Société A^{te} au Capital

de 5.000.000 de Fr^s

SIEGE SOCIAL
98, RUE DE RICHELIEU, 98
- PARIS -

PARIS 1900
GRANDS PRIX
HILANT 1900
Membre de Jury - Hors Concours

TÉLÉPHONE (247-44
247-68

98, RUE DE RICHELIEU.

Paris, le 27 Mai 1910

Monsieur DYER

c/S. Edison Manufacturing C^o

(ORANGE) New-Jersey

Monsieur,

Le 1^{er} Juin 1908, nous vous écrivions ce qui

suit :

"Privée et confidentielle

Paris 1^{er} Juin 1908

Monsieur Dyer

C/O EDISON MANUFACTURING C^o

(Orange) New-Jersey

"Monsieur,

- " J'ai soumis à notre Conseil d'Administration les propositions
- " que nous avions discutées ensemble durant mon séjour à New-York.
- " Mes collègues seraient heureux, vu nos très importantes rela-
- " tions commerciales aux Etats-Unis, que le procès Desbrière n'existât
- " plus entre nous.
- " Nous sommes néanmoins dans une position assez gênante envers
- " les maisons amies allemandes qui combattent actuellement, avec des chan-
- " ces de succès, votre brevet en Allemagne; car en reconnaissant votre
- " brevet, non-seulement nous l'abandonnons, mais nous vous fournissons un
- " atout très important contre eux, dans le procès de nullité du brevet al-
- " lemand.
- " Néanmoins nous estimons que l'intérêt de notre Société n'est pas
- " de combattre votre brevet sur un article qui disparaîtra pour nous, dans
- " un court espace de temps.
- " Nous sommes donc d'accord pour reconnaître votre brevet et d'être
- " licenciés par vous jusqu'à sa fin.
- " En ce qui concerne la royauté proposée qui devait commencer le
- " 1^{er} Août 1909, nous préférons de payer de suite une somme nominale
- " et éviter les complications d'un compte à tenir sur les cylindres faits
- " et vendus.
- " Nous basant sur l'offre que nous avait faite M. Desbrière dans
- " sa lettre et dont je vous envoie copie, nous pensons que la somme de
- " 10.000 francs pourrait être considérée comme équitable. (Nous pensons réel-
- " lement que cette somme est supérieure à celle que nous vous paierions
- " avec la royauté proposée, durant l'existence des cylindres chez nous)

PHOTOGRAPHES PATHE

" Pour résumer, nous accepterions la transaction suivante:
 " Le procès Desbrière serait abandonné, chaque parti supportant ses propres dépenses et ses frais judiciaires.
 " Nous reconnaitrions le brevet Desbrière et nous en serions les licenciés jusqu'à sa fin.
 " Nous vous verserions une somme de 10,000 francs.
 " Nous espérons que les propositions ci-dessus seront reçues par vous dans le même esprit amical que celui qui nous les dicte.
 Votre dévoué
 l'Administrateur-délégué
 signé: E.A.Ivatts"

Le 29 Juin vous nous répondez par la lettre suivante:
 Orange N.J. June 29, 1908

E.A.Ivatts, Esq. Managing Director,
 Pathé Freres
 26, Rue de Richelieu, Paris, France

"Dear Sir:
 " I have your letter of the 1st. inst., proposing on behalf of Pathé Freres the settlement of the suit based on the Desbrière patents in France and without prejudicing in any way our rights for the prosecution in Germany of the suits on the corresponding patents, said settlement being the following :
 " 1. Desbrière law-suit in France against Pathé Freres will be abandoned, each party paying its own expenses and legal fees.
 " 2. Pathé Freres will recognize the validity of the Desbrière patents and will be licensed under the patents so long as they shall run.
 " 3. Pathé Freres will pay us the sum of 10,000 Francs in full settlement for all damages for past infringements of said patents and for future royalties thereunder.
 " In reply I beg to advise you, on behalf of the Edison interests that your proposition is accepted.
 " I will be much obliged if you will take up this matter with my attorneys in Paris, Messrs. Brandon Bros., 59 Rue de Provence who will prepare the necessary papers and forward them to me for approval.
 I am glad that this matter has been disposed of, and hope that the friendly spirit now existing between our two interests will continue
 With assurances of my personal regard, believe me
 Yours very truly
 Frank L. Dyer
 Chairman Executive Committee

Une transaction étant sur le point d'aboutir entre notre Compagnie et:
 1°- Monsieur Croyton Marcks, de Londres,
 2°- Compagnie Française du Phonographe Edison, de PARIS, nous

PHOTOGRAPHES PATHE

Chèque N° 3
1914

convenons réciproquement, que les deux lettres précitées sont considérées comme nulles, et sans valeur entre nos deux Sociétés.

Toutefois cette annulation ne deviendra effective qu'après la signature de la transaction dont il est question plus haut, ce qui ne saurait être différé que de quelques jours.

Nous vous prions de vouloir bien nous dire d'accord avec nous par retour du courrier si possible et

Agréés, Monsieur, l'assurance de nos sentiments amicaux

Les Directeurs PHOTODUPTES, CINÉMATOGRAPHES
ET APPAREILS DE PRÉCISION
L'Administrateur délégué

Ed. J. Dyer

Monsieur DYER, Orange, New-Jersey

NATIONAL PHONOGRAPH COMPANY

June 7, 1910.

Compagnie Generale de Phonographes,
Cinematographes et Appareils de Precision,
98 Rue de Richelieu,
Paris, France.

Gentlemen:

Yours of May 27, 1910, has been duly received, and I note with satisfaction that the litigation between your Company and Mr. C. Croydon Marks of London and also the Compagnie Francaise du Phonographe Edison is about to be settled. I am quite willing to agree that my letter to you of June 29, 1908, shall be considered as void and without value between our two companies, upon the understanding, of course, that your letter to me of June 1, 1908, is to be also withdrawn and annulled.

Accept, gentlemen, my best wishes, and believe me,

Yours very truly,

FLD/IFW

President.

**Legal Department Records
Phonograph - Case Files**

National Phonograph Company v. American Graphophone Company
(Miller and Aylsworth Patent 683,615)

National Phonograph Company v. American Graphophone Company
(Miller and Aylsworth Patent 683,676)

New Jersey Patent Company v. American Graphophone Company
(Joyce Patent 831,668)

This folder contains material pertaining to three suits brought against the American Graphophone Co. in the U.S. Circuit Court for the Southern District of West Virginia. The first two suits were initiated by the National Phonograph Co. in June 1905; the third by the New Jersey Patent Co. in November 1906. The cases involved three patents on methods of duplicating phonograph records—Walter H. Miller's and Jonas W. Aylsworth's U.S. Patents 683,615 and 683,676 and Maurice Joyce's U.S. Patent 831,668. The cases were consolidated by stipulation in January 1908 and dismissed with costs to the defendant in December 1910. The selected documents include correspondence by Frank L. Dyer and Herbert H. Dyke of the Legal Department and Philip Mauro and C. A. L. Massie, attorneys for the defendant, pertaining to the progress of litigation. Also included are the following items from the printed record of the consolidated case: index; complainant's brief in support of a motion to suppress the deposition of Mauro; defendant's brief in opposition to the motion; defendant's proofs; and complainant's rebuttal proofs.

*What
you
want*

Jan. 23, 1908

Melville Church, Esq.,
908 - G Street,
Washington, D.C.

Dear Mr. Church:-

I have three suits pending in West Virginia against the American Graphophone Company, in which the same record is to be used. Two of the suits are brought by the National Phonograph Company on patents of Miller & Aylsworth, and one by the New Jersey Patent Company on the patent to Joyce. No Edison patent is involved and Mr. Edison has no connection whatever with the suits. Mr. Mauro has presented a deposition that consists entirely of a most scurrilous and utterly unjustified attack on Mr. Edison's reputation and integrity, and on the reputation of the National Phonograph Company. He claims that the phonograph is really a graphophone as invented by Bell and Tainter, and that the use of the former name is fraudulent and highly reprehensible. He takes up the various legal company litigations and claims that the National Phonograph Company is doing business in de-

No. 2 - M.C.

fiance of the courts. He refers to my unfortunate experience with Judge Platt, where a temporary restraining order was obtained on a patent that had expired by reason of the expiration of a prior foreign patent, and makes it appear that this action on our part was entirely deliberate. He claims that the suits before Judge Platt on entirely different patents are conclusive of the present suits. And he brings into the case, the action taken by Mr. Edison against the Thomas A. Edison Jr. Chemical Company, and seeks to give the impression that Mr. Edison, by that action, was striking at his own son. After the deposition he puts on the record, the following notice:-

"Counsel for defendant hereby gives notice that at or before the final hearing herein, he will move the Court for the imposition upon complainants of a fine of not less than Twenty five thousand dollars (\$25,000) for their inequitable conduct as shown by the testimony herein, and for the damage and loss wrongfully inflicted upon defendant thereby. And for such other and further relief as to this Court shall seem just."

I can hardly reconcile Mauro's attitude in this matter with a balanced mind. His testimony is outrageously unfair, and distorted and is utterly unworthy of him. It seems to me that I should promptly move to have the deposition expunged with costs on defendant. Of course, every statement can be met and fully explained, but to do this would involve the taking of an enormous mass of test-

No 3 - MG.

entire history of all of these litigations. Can it be possible that a defendant in an ordinary patent suit, involving the usual issues of validity and infringement, should have to go to such trouble and expense? This issue alone would probably require a thousand pages of testimony. It is entirely irrelevant, and for the most part relates personally to Mr. Edison, who is not a party to the suits. At the same time, of course, we cannot, as a matter of self respect, allow a defamatory attack of this character to go unanswerd.

Please think this question over and advise me if you agree with me in the matter. Personally, I do not think the court should hesitate for one instant in granting us relief.

Yours very truly,

ELD/ARK.

General Counsel.

MELVILLE CHURCH,
A. B. CHURCH.

A. B. STEUART.

PATENT CAUSES.

LAW OFFICES OF
CHURCH & CHURCH,

McGILL BUILDING,
303 G STREET N. W.

LONG DISTANCE TELEPHONE
MAIN 2124.

CABLE ADDRESS "CHURCH"
A. C. CASE USA.

WASHINGTON, D. C. Jan. 31, 1908.

Mr. Frank L. Dyer,
Edison Laboratory,
Orange, N. J.

W. R. Lusk



My dear Mr. Dyer:-

I have examined with care, and, I may add, with feelings of indignation, the deposition of Mr. Mauro given in the West Virginia suit. It is in the record and even though it were, on motion, suppressed, it would still remain there. (Please vs. Garlington, 92 U. S. 1)

Mauro was not justified in going on the stand at all. There was no exigency. Record evidence or his client's testimony would have served the same purpose. His whole conduct was a violation of established legal ethics and serves to show how a long and intimate association with the management of the American Graphophone Company may undermine and warp an able lawyer of good natural instincts.

The XXXV Resolution of Hoffman in regard to Professional Department (Hoffman's Course of Legal Study, 2nd Ed. Vol. II, p. 751) reads as follows:

"XXXV.

I will never be voluntarily called as a witness in any cause in which I am counsel. Should my testimony, however, be so material that without it my client's cause may be greatly prejudiced, he must at once use his option to cancel the tie between us in the cause, and dispense with my further services or with my evidence. Such a dilemma would be anxiously avoided by every delicate mind, the union of counsel and witness being

Dyer--2

usually resorted to only as a forlorn hope in the agonies of a cause, and becomes particularly offensive when its object be to prove an admission made to such counsel by the opposite litigant. Nor will I ever recognize any distinction in this respect between my knowledge of facts acquired before and since the institution of the suit, for in no case will I consent to sustain by my testimony any of the matters which my interest and professional duty render me anxious to support. This resolution, however, has no application whatever to facts contemporaneous with and relating merely to the prosecution or defense of the cause itself; such as evidence relating to the contents of a paper unfortunately lost by myself or others-- and such like matters, which do not respect the original merits of the controversy, and which, in truth, adds nothing to the once existing testimony; but relates merely to matters respecting the conduct of the suit, or to the recovery of lost evidence; not does it apply to the case of gratuitous counsel,--that is, to those who have expressly given their services voluntarily."

The Code of Legal Ethics adopted by the Alabama State Bar Association contains the following provision:

"21. Where Attorney Becomes Witness for his Client.--When an attorney is a witness for his client except as to formal matters, such as the attestation or custody of an instrument and the like, he should leave the trial of the cause to other counsel. Except when essential to the ends of justice, an attorney should scrupulously avoid testifying in court in behalf of his client, as to any matter." (Alabama Code, Sec. 18)

This provision has been adopted by the following Bar Associations: Georgia (Sec. 18); Virginia (Sec. 18); Colorado (Sec. 18); North Carolina (Sec. 18); Wisconsin (Sec. 18); Maryland (Sec. 18); Kentucky (Sec. 18); Missouri (Sec. 14); Michigan (Sec. 38), and, I am glad to be able to report, has also been adopted by the Bar Association of the State of West Virginia (Sec. 18)

I have written to the secretary of the West Virginia Association for a copy of the Code of Ethics of that state

Dyer--3

and will forward it to you as soon as I receive it.

Your technical objection to the deposition "As scandalous, impertinent, incompetent and immaterial", might have been amplified to have included hearsay, secondary evidence, matter of opinion and arguments, and you should, perhaps, in strictness, have pointed out the portions of the deposition to which these particular objections were, respectively, aimed. If the manner of producing the deposition had been by question put and answer given, in the usual way, you could, by properly phrased objections, have kept the matter better in hand. The course of procedure that was adopted, or permitted, confirms my theory, many times expressed, of the dangers of permitting testimony to be adduced out of the presence of opposing counsel.

I am not sure of the fate of a motion to suppress. It will depend altogether upon the temper of the judge before whom the matter is brought. At all events, I would not bring on the motion, now; though I would bring it on at or just before the hearing, upon reasonable notice. When it comes up, I would make a dead set for Mauro, ask for the application of the West Virginia rule and that the deposition be laid out of view.

I would, under no circumstances, endeavor to make reply to the deposition, in kind. It has been my experience that such a throwing of dust or mud seldom or never has any effect upon a meritorious case, and if these West Virginia cases are otherwise good the only effect that the deposition will have

Dyer--4

upon them will be to create a prejudice in the complainant's favor. You and your people are very naturally incensed over the matter and are perhaps not in a frame of mind to act soberly and dispassionately. My best judgment is that you can afford to wait until the hearing to administer your rebuke. If Mauro has been regularly admitted to the West Virginia bar (which can be readily ascertained) his position will be much worse.

I return the deposition herewith.

Yours truly,

EG

A handwritten signature in cursive script, appearing to read "Edwin M. Church". The signature is written in dark ink and is positioned below the typed name "Edwin M. Church".

New Va Suit

May 18, 1908.

Hon. Benjamin F. Keller,
United States Judge,
Bramwell, Mercer Co., W. Va.

Dear Judge Keller:-

NATIONAL PHONOGRAPH COMPANY vs. AMERICAN GRAPHOPHONE COMPANY.

(TWO SUITS);

NEW JERSEY PATENT COMPANY vs. AMERICAN GRAPHOPHONE COMPANY.

Frank L. Dyer, Esq., counsel for complainants, informs us that your Honor has set the 20th inst. as the date for hearing complainants' motion to strike from the files of this Court the Mauro deposition taken in the three above-entitled cases.

We beg to enclose herewith defendant's brief in opposition to motion. We likewise enclose a carbon copy for complainants' counsel, who expects to attend before your Honor and make an oral argument; we would request your Honor to be so good as to deliver the copy to Mr. Dyer, or his representative, as counsel for complainants.

Respectfully yours,

Counsel for the American Graphophone
Company.

S-H.

AFFIDAVIT OF SERVICE.

STATE OF _____
 COUNTY OF _____
 ss.:

_____ being duly sworn, says that he is
 _____ years of age and upwards, that on the _____ day of _____, 19____, between the hours
 of _____ M. and _____ M., at _____ in the
 _____ he served the within
 _____ upon _____ by exhibiting the within original to _____
 _____ and delivering to and having with _____ a true copy thereof.

Sworn to before me this _____
 day of _____, 19____.

Mary Park.

IN THE CIRCUIT COURT OF THE UNITED STATES
 For the Southern District of West Va.

NATIONAL PHONOGRAPH COMPANY
 vs.
 AMERICAN GRAPHOPHONE COMPANY.
 vs.
 NATIONAL PHONOGRAPH COMPANY
 vs.
 AMERICAN GRAPHOPHONE COMPANY.
 vs.
 NEW JERSEY PATENT COMPANY
 vs.
 AMERICAN GRAPHOPHONE COMPANY.

In Equity, Docket No. _____

On _____ Patent No. _____

DEFENDANT'S BRIEF IN OPPOSITION
 TO MOTION TO EXPUNGE MAURO
 DEPOSITION.

PHILIP MAURO, !
 C. A. L. MASSIS,
 Solicitors & of Counsel for Def't.
 Tribune Building, 154 Nassau Street, New York City.

To Frank L. Dyer, Esq.,
Of Counsel for Complainants.

Due and timely service of a copy of the within
 _____ is hereby admitted
 this _____ day of _____, 19____.

Sir: Please take notice that _____

of which the within is a true copy, was duly filed and entered
 in the office of the Clerk of the United States Circuit Court

for the _____ District of _____ on
 the _____ day of _____, 19____.

Yours, etc.,

To _____

Sir: Please take notice that _____

of which the within is a true copy, will be presented for
 _____ to _____

at _____ on the _____ day of _____, 19____.

at _____ o'clock _____ M., or so soon thereafter as counsel
 can be heard.

Dated _____

Yours, etc.,

To _____

IN THE CIRCUIT COURT OF THE UNITED STATES
Southern District of West Va.

NATIONAL PHONOGRAPH COMPANY In Equity on Miller
vs. & Aylsworth Patent
AMERICAN GRAPHOPHONE COMPANY No. 883,618.

NATIONAL PHONOGRAPH COMPANY In Equity on Aylsworth
vs. & Miller Patent No.
AMERICAN GRAPHOPHONE COMPANY 683,676.

NEW JERSEY PATENT COMPANY In Equity on Joyce
vs. Patent No. 831,668.
AMERICAN GRAPHOPHONE COMPANY

DEFENDANT'S BRIEF IN OPPOSITION TO MOTION TO
EXPURGE MAURO DEPOSITION.

Preliminary.

The matter should be brought up by Exception, and referred to a Master.

Equity Rules of Supreme Court, Rules 26 and 27.

Although these rules apply especially to bills and other pleadings, yet they hold good with regard to depositions also.

Story's Equity Pleadings, 10th Ed. Sec. 861g,

P. 746; and Rule 27 supra.

Outline of Argument.

Nevertheless, assuming that the Court will entertain the Motion to expunge the Mauro deposition (instead of requiring Exceptions), this motion must be denied upon four

grounds:

(1) "Nothing can be scandalous which is relevant", and the Mauro deposition is relevant.

(2) To determine whether or not the Mauro deposition or any material part thereof is irrelevant (and therefore open to the objection of being "scandalous"), would require a perusal by the Court not only of the entire Mauro deposition but of the entire mass of the testimony, and a consideration of all the matters here in controversy, - in short, such consideration as the Court would have to give at final hearing, and it therefore should be postponed until the final hearing.

(3) As a matter of fact, the defendant asserts affirmatively that the Mauro deposition is very material and pertinent to the merits of this case, and is not scandalous.

(4) Under the decision of the Supreme Court in Bleas vs. Garlington (92 U.S. 1), the Circuit Court is not permitted to strike out any testimony that might hereafter be found relevant or material, but must retain the testimony and reserve the exception of the opposite party.

ARGUMENT.

I.

The citation from Story's Equity Pleading Sec. 661a, P. 746) and Equity Rule 27, show that the same definitions

of "scandal" and the same rules as to whether or not it may be expunged, apply to depositions as well as to pleadings. It seems unnecessary to define what is "material" or "relevant"; but "nothing can be scandalous which is relevant". And "the sole question is whether the matter alleged to be scandalous has a tendency, or, in other words, would be admissible in evidence, to show the truth of any allegation in the bill that is material with reference to the relief that is prayed", - material either in granting or refusing the relief prayed.

See Beach's Modern Equity Practice, Sec. 407,
p. 426, and foot notes.

Same, Sec. 109, p. 136, and foot notes.

Again -

"But, as in a bill, so in an answer, nothing relevant can be deemed scandalous. It is not the nature of the matter in an answer, which makes it scandalous; for if the matter is relevant, according to the case made by the bill, whatever may be the nature of such matter, it is not scandalous; and it may have an influence upon the decision of the suit, notwithstanding the nature of it."

Story Equity Pleading, Sec. 662, p. 726,
and foot notes.

"But nothing, which is positively relevant to the merits of the cause, however harsh or gross the charge may be, can be correctly treated as scandalous. Thus, for example, in

bills to set aside deeds, or other instruments, for fraud, there are often to be found gross charges in relation to the matter of the asserted fraud. But these charges are not, by any rule of the Court, to be deemed scandalous. And, indeed, such a proceeding - i. e., to expunge relevant testimony because scandalous - might be dangerous to the cause itself, and prevent a due investigation of its merits. Hence it is, that nothing pertinent to the cause is ever deemed scandalous; and the degree of relevancy is not deemed material". (Ballesours).

Story, Sec. 269, p. 256, and foot notes.

For an illustration, and a recent discussion, we refer the Court to Burden vs. Burden, 124 F.R., 250.

To sum up, without citing any other authorities, - no matter how gross may be the charges contained in the matter complained of as scandalous, if such matter is or may be in the slightest degree RELEVANT, it must not be expunged.

And if the allegation excepted to can have any influence whatever in the decision of the suit - either as to the subject-matter of the controversy, the particular relief to be given or withheld, the awarding of costs, etc. - it is not impertinent.

Von Schroder vs. Brittan, 98 F.R. 169, 171;

Van Rensselaer vs. Eries, 4 Paige (N.Y.), 174;

Hawley vs. Wolverton, 5 Paige; 332;

Lenlie vs. Lenlie, 50 N.J. Eq., 155, 156-7.

II.

From the foregoing, it is manifest that, to justify the Court in expunging the Mauro deposition (or any part thereof) the Court will be called upon in the first place to determine that the passage or passages objected to are irrelevant, and will not even tend to affect the decision of the cause.

But, to do this fairly, the Court must consider the entire merits of the cause, and must read and consider all the evidence. The Court will scarcely undertake this labor in advance of the final hearing, at which time the same evidence will then have to be considered again. Especially since defendant, regarding the Mauro deposition as material (as we do), would of course enter its Exception to an order expunging it; so that the entire matter would have to be considered again, anyhow, at the final hearing.

III.

We have shown that matter will not be expunged on the ground of its alleged "scandalous" nature, if it is (or may be) at all relevant; and that the Court is not called on at this stage of the case, in advance of final hearing, to read and consider the entire evidence in order to determine conclusively, before the final hearing, that such testimony is not relevant and is scandalous. In other words, the burden is on complainant to show that the deposition is absolutely irrelevant and immaterial as well as scandalous, and the Court must so hold before it can

expunge. But defendant asserts affirmatively, and we will now briefly demonstrate, that the facts set out in the Mauro deposition are highly material to the determination of this cause, wherefore they cannot be the subject of an objection for scandal.

1. This Court is familiar with the cardinal maxims of equity, under which a court of equity will refuse relief to a complainant if he has been unconscionable or oppressive or vexatious in seeking the relief. For instance, where a plaintiff has unquestionable legal rights which have been invaded by a defendant, yet if the complainant be oppressive, or unconscionable, or inequitable, in asserting his rights, courts of equity will refuse him the relief to which he would otherwise be entitled. Unconscionable conduct disentitles a complainant to relief in equity, and he is remitted to his common law rights (if any). And the Mauro deposition shows this inequitable character of complainant's conduct.

2. The Massie deposition now filed in these cases shows clearly not only that the defendant is not infringing any of the patents here in suit, but that it is inconceivable how the defendant could, by the transaction complained of, be simultaneously infringing all the patents, - because the patents in suit are inconsistent with each other. We will make this plain later; but the present pertinence of this fact is that the complainants by bringing these inconsistent suits are merely making use of their position as patent-owners in order to harass us. And the Mauro deposition shows the general course of conduct the

complainants have practiced against us in this regard.

To state briefly the question of infringement: The two Miller and Aylworth patents in suit call for the use of a cold mold, and require that this mold must not become heated; while the Joyce patent in suit calls for a hot mold that must be heated before use; yet in all three cases complainants are complaining of the same acts by defendant. It is inconceivable that one can be using a mold that is simultaneously a hot mold and a cold one. And it is inconceivable that complainants have not been aware of this inconsistency.

To be more specific: the Miller and Aylworth patents require, as noted, that the mold must be cold, and that the material which is to be used with the mold, must not be heated much above its melting-point; the Joyce patent, as noted, calls for the use of a hot mold, but (like Miller and Aylworth) requires that the material must not be heated much above its melting-point (while the mold must be slightly below this temperature); whereas, in defendant's process, which has long been well known to complainants, the mold is taken cold, while the material is heated to a temperature of about 150 degrees above its melting-point, and the mold after being filled when cold, is subsequently heated to the same abnormally-high temperature.

The foregoing is a brief but fair presentation of the facts relating to "infringement", nothing being now said as to the validity of the three patents. If this were the first occasion upon which the complainants had brought an ill-advised suit against us, the situation might not appear so oppressive. But the Mauro deposition shows that these suits are the continuation of a long course of

oppressive conduct complainants have been indulging in against this defendant through a number of years.

The Mauro deposition further shows the highly significant fact that this complainant has ceased to harass this defendant with suits in the Courts of the Second Circuit where its (complainant's) inequitable conduct is well known, and has sought this Court as a fresh field for its outrageous line of conduct; and particularly that complainant had, for many years, suits pending against defendant in the Second Circuit on these very Miller and Aylsworth patents, and that it withdrew said suits in order to transfer the cases to this Court.

3. If the Mauro deposition were not in these cases, we would have no fear as to the immediate outcome of these particular suits, inasmuch as this Court will undoubtedly dismiss these bills because the patents are not infringed (and, perhaps, on the further ground that the patents are not valid); but there would then be nothing to prevent the complainants from bringing against us other suits, upon other patents, and in still other jurisdictions, with as little foundation as these suits. Therefore the Mauro deposition is presented as supplementing our application to this Court, as a Court of Equity, to exercise its inherent powers of doing justice between the parties, in order to deter the complainants from waging against us such unfair campaigns.

4. This is not the case for a cross-bill; a cross-bill asserts some right of the defendant in connection with the subject-matter of the suit, and prays for affirmative relief with regard thereto, against complainant. The

"subject-matter" of these suits consists of the particular patents set up; and this defendant asserts no rights in or under these patents. We do not ask affirmative relief with regard to a legal claim in our favor, subsisting before the bills were filed, as against the subject-matter of these suits, - but the wrong we complain of is the filing and the prosecution of these unwarranted and vexatious suits, as the continuation of an oppressive course of conduct. Another reason why a cross-bill is not proper, is that a cross-bill must seek relief cognizable by a Court of equity, as for instance, an injunction. We may not ask that these defendants be enjoined from bringing against us other suits on other patents; we merely ask that this Court of equity do justice to the parties now before it, upon the facts as made out in the record before this Court.

In the Connecticut case referred to in the Mauro deposition and reported in 135 F.R., the Connecticut Court directed complainant to pay us, by way of compensation for the oppressive nature of that suit, a fine of \$500.00. It might be supposed that this would suffice to put an end to the oppression, but \$500.00 is comparatively a small sum in the eyes of a large corporation, and evidently that small fine has not had the desired effect. Therefore, defendant's counsel has given notice^{hereto} at the end of the Mauro deposition, that this Court will be asked at final hearing to inflict a more forcible reproof upon complainants, and give the defendant a more adequate redress.

IV.

But without regarding any of the foregoing arguments given in this brief, which refer to Equity practice in

general, the matter has been determined once for all by the Supreme Court of the United States. In Hlease v. Garlington, that tribunal has announced:

"If testimony is objected to and ruled out, it must still be sent here with the record, subject to the objection, or the ruling will not be considered by us". (Italics ours).

Hlease v. Garlington, 92 U.S. 1, p. 8.

Since that decision, the Federal Courts, whenever the case of Hlease v. Garlington has been brought to their attention, have invariably refused to strike out any testimony - which is thus safeguarded even beyond the rules relating solely to pleadings - and have reserved the entire testimony in the record, together with the exceptions thereto.

✓
CONCLUSIONS.

For each of the reasons presented, the motion to expunge should be denied in all respects.

Respectfully submitted,

Philip Mauro
Carl Massee
Solicitors and of Counsel for Defendant.

SUPPLEMENTAL.

The foregoing memorandum was prepared within a few days after the close of the Mauro deposition, and upon the notice by complainant's counsel appearing in the record. We are now in receipt of complainant's motion papers and note that they are fatally insufficient in not specifying wherein, in what respects, the Mauro deposition is "scandalous" or "impertinent" or "incompetent and immaterial" or "matter of opinion and argument" or "largely hear-say" or "designed to create an immaterial issue" etc., etc.; nor do the motion papers specify the particular passages obnoxious on any of the grounds alleged in the motion.

Complainants come here and ask the Court to expunge practically the entire Mauro deposition upon the ground alleged by complainants that the deposition is "scandalous", "impertinent", etc. Since, as shown in our main brief, the burden of proof to establish these charges, rests upon complainants, their motion papers should certainly make some kind of showing in this regard. Since their papers are silent in this regard, except for the mere say-so of complainant's counsel, for this reason alone the motion should be denied.

In the second place, it is not sufficient to say in substance that one unspecified part of the deposition is objectionable because "scandalous", while another unspecified part of the deposition is objectionable because "matter of opinion and argument", and still a third unspecified part of the deposition is "incompetent and immaterial" etc. The objection should be specific not only in

stating the ground of objection, but also in pointing out the particular passage objected to on that particular ground. The present procedure is analogous to the filing of Exceptions; where the Exception must specify the particular passage objected to and the ground of the objection to that particular passage, and if the Exception extend to more than is properly objected to, the Court will not expunge the objectionable portion, but will hold the Exception bad as being too broad:

"and if an exception be partly good and partly bad, it must be overruled in toto."
Beach's Mod. Eq. Pr., § 112, p. 139;
Daniell's Ch. Pr. (5th Ed.), 352;
Chapman v. School Dist. No. 1, Dundy, 108, 117;
Tench v. Cheese, 1 Beav., 571-5;
Wagstaff v. Bryan, 1 R. & N., 30.

Complainants' motion papers say:

"If the deposition of the said Mauro be not expunged, complainants will be put to great trouble and expense in the taking of depositions in reply, which will be extremely voluminous."

"Irrelevant and immaterial" statements do not have to be rebutted by "extremely voluminous" depositions taken at "great trouble and expense". Complainants' motion papers stand as an admission that the Mauro deposition is material and effective.

In addition to the reasons urged in the main brief, the motion should be denied for the three reasons just stated, first, that the motion papers do not contain a showing in support of the motion; second, because the motion papers do not specify which grounds of objection apply to which specific portions of the Mauro deposition; and, third, because complainants' motion papers show that the Mauro deposition is material, and therefore may not be expunged as "scandalous".

Respectfully submitted,

Philip Mauro
Attorney

Solicitors and of Counsel for Defendant.

Dated, New York City, May 18, 1908.

May 25, 1908.

C. A. L. Massie, Esq.,
Tribune Bldg.,
New York, N. Y.

Dear Sir:-

Please find enclosed copy of my brief in the West Virginia Suits upon the motion to expunge, together with copy of letter to Judge Keller and proposed form of order, the last two of which I am mailing to Judge Keller to-day. Please pardon me for not sending you copy of brief earlier, as I had intended to do, but it had been overlooked owing to pressure of over-work.

Yours very truly,

General Counsel.

HHD/CNH

[ATTACHMENT]

May 25, 1908.

Hon. Benjamin F. Keller,
United States District Judge,
Bramwell, W. Va.

WEST VIRGINIA SUITS.

NATIONAL PHONOGRAPH COMPANY & N. J. PATENT COMPANY

v.

AMERICAN GRAPHOPHONE COMPANY.

S i r :

Pursuant to the understanding had at the hearing on the 20th inst., I beg to submit the following. A copy of this letter has been sent to Mr. Mauro, counsel for the American Graphophone Company.

You will find enclosed a form of order which I trust will meet your views and to make it clear why I have drawn the order in the form in which you find it, it will be necessary for me first to state what I understand your position to be in the matter. Of course,

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my understanding may have been erroneous, but my recollection of your attitude is the following:

Mauro's testimony has no bearing upon the issues of ownership, validity and infringement of the patents involved in these suits, when these suits are considered solely in their aspect as suits brought to enjoin the infringement of patents, and in the consideration of these issues no attention should be paid to this deposition.

The issues involved in these cases as patent cases should be first determined. If, upon the determination of these issues, the finding of the Court is in favor of defendant, and the Court is further convinced that these suits were brought without a reasonable expectation of success, then the deposition of Mauro may possibly become relevant as tending to show an effort to abuse the process of the Court and to harass defendant by the bringing of unfounded suits. Because of this possibility, I understand, you are unwilling to expunge Mauro's deposition from the record at this time.

Should the issues of these cases as patent cases be found in favor of defendant, and should the further finding be made that these suits are brought without

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reasonable expectation of success, defendants should have the right to bring on the motion of which Mr. Mauro has given notice and on the hearing of that motion should have the right to make use of the testimony of Mauro already given, while complainants should have the right at that time to put in answering testimony.

Mr. Dyer and I concur perfectly with your attitude on the matter, if your views are expressed by the above. Complainants are, in every way, willing to fairly and squarely meet any charges which may be made against them. They desire, however, that the defendant be not allowed to prejudice them before the Court and the public by being permitted to include within the printed record, on which these cases will be decided in the first instance, that is, in their aspect as pure patent cases, any such testimony as that which has been given by Mr. Mauro, but that such testimony and its consideration be reserved until the issues of ownership, validity and infringement of the patents in suit have been disposed of. The printed record in these suits, which is printed under the direction of the Clerk of the Court and is accessible to the public, is a public record and can be made use of for any of the various purposes to which public records are put, including use for advertising purposes. Any possible use of this

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evidence for improper purposes should be prevented. We suggest, therefore, that an order be made, directing that, for the present, the deposition of Mauro shall be retained in the custody of the Clerk of the Court, and that, for the first hearing of these cases, a printed record be made up which shall not contain the Mauro deposition, and that if a second hearing becomes necessary, under the conditions already named, upon the motion which counsel for defendant has given notice that he expects to bring, defendant should have the right to put into that record the testimony of Mauro already given and complainants should have the right to furnish testimony in their own behalf. In this way the Mauro deposition would serve the only possible legitimate purpose for which it could be used and its use for improper purposes would be prevented.

If defendant has any right to bring on such a motion at all, which we do not admit, it seems to us that the dividing up of the cases in the way above suggested would be entirely proper and in accord with the precedents. Foster's Federal Practice, Vol. 1, page 670-671, recognizes the right of a Court of Equity to take up so much of a case as seems proper to it at one time, leaving the remainder to be decided thereafter and on page 716, in paragraph 325a, it is stated that an Equity Court has a right "to add a clause to the decree giving a right to parties to apply to the Court for other orders or directions" at the

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foot of the decree". And, of course, it is a well recognized fact that Courts of Chancery may settle matters in issue before them in such ways and divisions as seem proper. Furthermore, the motion which Mr. Mauro has given notice that he will bring is in its nature a contempt proceeding as it is based upon the notion that complainants have abused the process of the Court in bringing these suits. A decision upon a petition to attach for contempt, as you are of course aware, cannot be reviewed at all unless a fine is ordered to be paid to the petitioner and then it is taken up by writ of error. For this reason the two actions should be separated as it is extremely doubtful that the Circuit Court of Appeals would review the contempt proceeding if it were taken up on an appeal along with the decision upon the issues raised by the pleadings.

By the "Deposition of Mr. Mauro" to which I have referred above, I mean the entire deposition, including the first few pages which, as you will remember, were not included in the motion to expunge. I believe that you will agree with me, however, that this portion of the deposition bears precisely the same relation to the remainder of the testimony in these cases as does the portion which it was moved to expunge. In making the motion we did not include this first portion of Mauro's testimony, because it did not appear to be as clearly scandalous as that which followed.

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but if you are of the opinion that all the testimony of
Mauro should be treated alike, as we believe it should be,
there is no reason why this should not be done, for the
Court has power to consider and dispose of a matter of this
sort of its own motion. Kelley v. Boettcher, 85 Fed. 55,
and Green v. Elbert, 137 U. S. 615.

Respectfully,

HHD/CHH

Enclosure-

[ATTACHMENT]

IN THE
CIRCUIT COURT OF THE UNITED STATES.

Southern District of West Virginia.

National Phonograph Company,)
Complainant,)
vs.)
American Graphophone Company,)
Defendant,)
In Equity On
Miller and
Aylsworth
Patent No.
683,615.

National Phonograph Company,)
Complainant,)
vs.)
American Graphophone Company,)
Defendant,)
In Equity On
Aylsworth &
Hiller Patent
No. 683,676

New Jersey Patent Company,)
Complainant,)
vs.)
American Graphophone Company,)
Defendant,)
In Equity On
Joyce Patent
No. 831,668

COMPLAINANTS' BRIEF

IN SUPPORT OF MOTION TO SUPPRESS DEPOSITION.

This is a motion to expunge the deposition
of Philip Mauro, a witness produced upon behalf of the
defendant, for the reasons:

"1. That the said testimony is
scandalous, impertinent, incompetent
and immaterial, is matter of opinion
and argument, is largely hearsay, and

IN THE CIRCUIT COURT
OF THE UNITED STATES
SOUTHERN DISTRICT OF W. VA.

NATIONAL PHONO.CO.) In Equity
vs. : on Pat-
AMERICAN GRAPHO.CO) ent 683615

NAT'L PHONO. CO.) In Equity on
vs. : Patent No.
AMERICAN GRAPH.CO) 683,676

N. J. PATENT CO.) In Equity
vs. : on Patent
AMERIC.GRAPHO.CO.) No.831,668

COMPLAINANTS' BRIEF
IN SUPPORT OF MOTION
TO SUPPRESS DEPOSITION.

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is designed to create an immaterial issue, to cloud the real questions involved, and to wrongfully and improperly prejudice the complainants herein.

2. That to meet the irrelevant and immaterial issues thus presented and to show to the Court that the statements of said Mauro are untrue and unfounded in fact, as is in reality the case, which complainants feel as a matter of self respect they should do, if the deposition of the said Mauro be not expunged, complainants will be put to great trouble and expense in the taking of depositions in reply, which will be extremely voluminous, and will necessarily encumber the record with a mass of equally immaterial and irrelevant testimony, affording no light to the court, and further confounding the real issues involved."

By stipulation of counsel, the evidence produced in any one of the above suits may be used in all of the others, so that this motion refers to a matter which is involved in all three of the suits.

These are ordinary suits for the infringement of patents. The issues, as defined by the pleadings, are the ownership, validity and infringement of the patents in suit. Every deposition which has been taken in these suits, with the single exception of the deposition of Philip Mauro, now sought to be expunged, is confined to these issues. The sole purpose of

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Mauro's deposition is to defame the defendant corporations, in order to prejudice them in the eyes of the Court. The law is well settled that in civil suits, such as these are, where the character of neither of the parties to the suit is in issue, character evidence is wholly inadmissible.

Morgan vs. Barnhill, et al, 118 F. R. 24.

(10 U. S. A. 5th Circuit):

"This is a civil suit between private parties. We find no reason for departing from the general rule which makes evidence of the character of the parties inadmissible. 1 Whart. Ev. Sec. 47, and cases there cited. The rule would, of course, be different in a civil case where the character of a party was at issue. Id. Sec. 48. The circuit court ruled correctly in excluding the evidence offered as to the character of the defendant. Givens vs. Bradley, 5 Bibb. 192, 6 Am. Dec. 646."

Nor can the introduction of character evidence in these suits be justified on the theory that it is intended to show that the complainants come into this court of equity with unclean hands. This point has frequently been decided in patent cases, and the law is clearly and succinctly stated in Bansack Machine Co. vs. Smith 70 F. R. 384, as follows:

"The charge that the complainants are without equity, going, as it does, to the jurisdiction of the court, will be first discussed. He who seeks equity must do equity. Whoso cometh into a court of conscience must come with clean hands. We look to the pleadings and facts of the case before us. The issues are these: Do the complainants hold letters patent of the United States giving them the exclusive right to make, vend, and use certain patentable devices? Have the defendants infringed the rights thus granted? If, in procuring these exclusive rights, or if in their exercise the complainants have been guilty of fraudulent or improper conduct towards these defendants, the fundamental principles relied on would deprive them of any relief in this court. But, if in the absence of these,

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it is sought to deprive them of their remedy for the infringement of their rights because of their motives in obtaining them, or of their motives in asserting them such motives are not the subject of judicial inquiry. Strait v. National Harrow Company, 51 Fed. 819. The rule that one coming into equity must come with clean hands is confined to the conduct of the party in the matter before the court, and not to matters aliunde. Courts of equity, as well as courts of law, will not refuse redress to the suitor because his conduct in other matters not then before the court may not be blameless. It is enough if the suitor shows that he has acted justly, fairly, and legally in the subject matter of the suit. Beach, Eq. Jur., Sec. 15, and cases cited. The iniquity must have been done to the defendant himself, and must have been done in regard to the matter in litigation. 1 Fem. Eq. Jur. 454."

See also Bateman vs. Ferguson, 4 F. R. 32.

Character evidence being inadmissible in these cases, and therefore unnecessary to be alleged or proven, it is scandalous.

"Scandal consists in the allegation of anything which is unbecoming the dignity of the Court to hear, or is contrary to good manners, or which charges some person with a crime not necessary to be shown in the cause; to which may be added, that any unnecessary allegations bearing cruelly upon the moral character of an individual is also scandalous." (Daniell's Chancery Pl. and Pr. Amer. Ed. p. 347.)

This definition is adopted by the Circuit Court of Appeals for the eighth circuit in Kelley vs. Boettcher, 85 F. R. 55.

The scandalous and outrageous character of this deposition is greatly increased by the fact that the deposition was given by Philip Mauro, who is also of counsel for defendant, when there was no adequate reason why he should testify at all. Certainly, if a deposit-

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ion of this sort were to be given at all, it could have been just as well given by one of the officers of the defendant company. We believe that the court would be amply justified in expunging this testimony on this ground alone. The Code of Legal Ethics of the Bar Association of West Virginia, in common with similar codes of other states, contains the following section both the letter and spirit of which have been violated by Mr. Mauro in giving this deposition:

"Where Attorney Becomes
Witness of his Client:-- When
an attorney is a witness for
his clients except as to formal
matters, such as the attestation
or custody of an instrument
and the like, he should leave
the trial of the cause to
other counsel. Except when
essential to the ends of justice,
an attorney should scrupulously
avoid testifying in court
behalf of his clients, as to
any matter."

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THE NATURE OF THE MAURO DEPOSITION.

The deposition of the witness Mauro, to which this motion relates, was taken in January, 1908, in the absence of counsel for complainants, the rights of objection and cross-examination being reserved. Mauro, who as already stated is also of counsel for defendant, chose to give his deposition in the form of a long and somewhat rambling statement, and not in the form of questions and answers. For this reason the objections had all to be made together at the close of the deposition instead of to each scandalous statement as it was made, but as this arrangement was of Mauro's own choosing, he and his clients should not be permitted to take advantage of this fact. In this deposition Mauro recited all that he knows or has ever heard about all of the litigation which has been carried on between complainants and defendant, and also between complainants and other parties, the latter being entire strangers to the defendant in the suits now before the Court. The statements in the depositions are clearly inspired by malice, are unfair and are intended to besmirch the character of the complainant corporations and of Thomas A. Edison. One reading this deposition will obtain the impression that the complainants are semi-criminal; that they willfully violate injunctions of the Courts; that they willfully institute litigation for which they know there is no basis; that they are wholly unfair in their competition, and that they have a reputation in the Courts in certain Districts which forbids them applying

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for any relief in these Districts. The obvious purpose of the whole deposition is to prejudice the Court against complainants and to distract attention from the real questions in issue. As a matter of fact and as appears to a considerable extent from the Cross-examination, if the entire truth of the matters touched on by Mauro were made known it would be apparent to the Court that his strictures upon the character of complainants and of Mr. Edison are entirely without foundation. For the purposes of this motion, however, we shall content ourselves with pointing out the scandalous nature of what is contained in this deposition.

"The North American Company"

Referring to the deposition specifically, it will be found that, beginning at line 17 of page 5, the witness Mauro has first discussed the relations existing between the Edison Phonograph Works, the National Phonograph Company and the New Jersey Patent Company, and seeks to give the impression that the North American Phonograph Company was unfairly and unlawfully manipulated so as to transfer the patents of Mr. Edison to the New Jersey Patent Company. All the patents in suit have been taken out since the dissolution of the North American Phonograph Company so that it is obvious that this testimony is wholly irrelevant and scandalous.

"Local Company Litigation"

On pages 6 to 9 of the deposition, the witness sets out what purports to be a history of the litigation between the North American Phonograph Company and certain

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of its licensees, particularly the New York Phonograph Company, and also of the litigation between the Columbia Phonograph Company and certain persons with whom the National Phonograph Company was made a party defendant. This portion of the deposition is filled with remarks that by their innuendo necessarily are scandalous. Attention is particularly directed to line 13, et seq. of page 8, in which the witness says:

" Judge Hazel tracked the title of the Edison patents to the North American Phonograph Company, back again to Edison after the failure of that Company at a time when Mr. Edison was its president, and from him to the National Phonograph Company."

At line 3, et seq. page 9, the witness says:

" The principle of these decisions would have and should have put the National Phonograph Company out of business, it having been decided by the highest courts of the land that the purpose for which it exists and the business it is carrying on is unlawful. But this Company apparently cares as little for the mandates of the courts as for the rights of its competitors."

These sentences are quoted merely to indicate the nature of the testimony and are by no means the only objectionable portions, all of the matter within the pages above referred to being scandalous and impertinent, having no possible bearing upon the issues before this Court. The witness himself at line 18 of page 9 tells why he has given this testimony, saying:

"The foregoing history is sufficient to explain why the National Phonograph Company ~~is~~ no longer dares go into the Courts of the Second Judicial Circuit to seek their aid in the furtherance of its inequitable campaign against this defendant. Its origin, career and character as a litigant are too well known to the Judges of those Courts to give it any prospect of success. Its only possible chance would be in a Court where its reputation is unknown."

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This quotation makes it clear that the witness is attempting to bias the mind of the Court against complainants, and furthermore contains a scandalous imputation that the Courts of the Second Circuit are unable to give a fair and impartial decision in suits to which complainants are parties.

"The Reproducer Suit"

From pages 9 to 12 inclusive, under the head of "The Reproducer Suit", the witness sets out a biased, partial and scandalous statement which purports to be the history of certain suits brought by complainants against defendant before Judge FLATT, in the District of Connecticut. Aside from the scandal injected into this testimony by the direct statement and innuendo of the witness, which occurs throughout this portion of the testimony, it is perfectly obvious that any litigation ^{which} might have been instituted by complainants for infringement of any patent for a reproducer, which is only one portion of the phonograph, can have no possible relation to the issues raised in suits brought on patents which involve methods and apparatus for molding sound records to be used on the phonographs.

"Molded Record Suits"

From page 12 to page 19 of the deposition, the witness under the head of "Molded Record Suits" injects into this case what purports to be a showing of the direct attempts of the Edison Company to destroy defendant's business of molding sound records, or to interfere with defendant's use thereof." He then enumerates eight suits

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which have been brought against defendant by complainants in the suits now before this Court and seeks to give the impression that each of these suits was baseless and instituted maliciously with the intent of destroying the defendant's business. This portion of the deposition is furthermore filled with hearsay and immaterial matter in reference to the prosecution of the application which matured into letters patent No. 831,668 now in suit. For these matters, it is obvious that the records of the Patent Office are the proper evidence. Wherever the Joyce application is referred to, it is done in an attempt to show that the application was manipulated for unlawful purposes by complainants by injecting claims into the application which were for substantially the same subject matter on which complainants had been defeated in prior suits.

"Cross Examination"

The cross-examination by Mr. Dyer will give the Court an idea of the nature and extent of the testimony which must be introduced into the case if it is attempted to supply full and complete information on all the subjects about which Mr. Mauro has testified. Such a record would be of enormous length and if complainants should also put in evidence all the facts in their possession regarding the improper practices of defendants, which would be the logical sequel of Mr. Mauro's deposition, the record would be made well nigh interminable, without, however, affording any light whatever on the true issues before the Court for decision. Yet, as a mere matter of self respect, this is the course which complainants must follow if the deposition of Mauro be allowed to remain in the record.

[ATTACHMENT]

In passing we pause to remark that it appears from the cross-examination that Ex Judge WALLACE of New York, after having been completely informed of the New York Phonograph Company litigation, mentioned by Mr. Mauro, expressed the opinion that the conduct of Mr. Edison and the National Phonograph Company was beyond reproach and that Mr. Edison had been made the victim of malignant and slanderous persons who sought to injure him (x-Q.55); that defendant has brought a number of suits on its patents against complainants, indicating that it is engaged in a campaign of enforcing its patents, although Mr. Mauro objects to the prosecution of a similar "campaign" by complainants (x-Q.68 - x-Q.70); that defendants through Mr. Mauro have made frequent endeavors to effect a combination with complainants (x-Q.78 - 92) which is hardly to have been expected if there were any real basis for Mr. Mauro's sweeping condemnations, and, finally, mention is made (x-Q.103, 4 and 5) of certain suits in the District of New Jersey brought by defendant against the National Phonograph Company, where the defense was that Macdonald, defendant's factory Superintendent, had stolen the secret composition of complainants, had it patented and then brought suit against the National Phonograph Company on the patents. Mauro disavows any knowledge of this matter, and says this suit is in charge of his associate, Mr. Massie, but as Mr. Mauro recently argued these cases on final hearing, it is likely, if questioned now on that subject, he would admit a greater knowledge of them.

[ATTACHMENT]

Re-direct Testimony.

After the cross-examination, which was made by counsel for complainants, without waiving the objections interposed to the direct testimony of the witness, Mauro, the latter emphasized the totally reckless spirit which characterized his direct testimony by adding thereto further so-called redirect testimony, in which he injected additional scandalous and impertinent matter into the record of this court and which, as a member of the Bar, he must have known could have no possible bearing on the issues or the equities to be considered by this Court. This redirect examination demonstrates the absolute malice of the witness, since in the last portion, under the title "Edison vs. Thomas A. Edison, Jr. Chemical Company", he makes a direct attack upon the reputation of Mr. Thomas A. Edison. A mere inspection will show the scandalous and malicious character of this portion of the deposition.

Moreover, under the heading "Helm Suits" the witness makes scandalous allegations to the effect that the complainants have carried on malicious suits against the New York Phonograph Company.

The court will have no difficulty in seeing that in those portions of the deposition objected to, and which are referred to in the motion to expunge, the witness was animated by malice; had no desire to inform the mind of the Court upon any issue now before it, but hoped and intended to so becloud the issues involved and so besmirch the character of the complainants, their officers and counsel, that the mind of the Court would be misled as to the real issues in these suits and be prejudiced against the complainants herein.

[ATTACHMENT]

THE COURT HAS POWER
TO EXPUNGE DEPOSITIONS FOR SCANDAL.

Blease vs. Garlington, 92 U. S. 1 - 10, decided March 20, 1876, is the case upon which all subsequent decisions regarding the admission of evidence in equity suits in the Federal Courts have been based. That was a suit on a bond and mortgage; an offer was made to adduce evidence showing certain collateral agreements and conditions relied upon in the giving of the bond for which the mortgage was security. The Court below excluded this evidence, but the record included a paper stating what it was offered to prove. The Supreme Court, in finally disposing of the case, considered what was offered to be proved and held substantially, that it was immaterial and irrelevant and if proven could not have affected the decision, and accordingly affirmed the decision of the Court below. The Court went on to set out the practice which should be followed as to the admission of proofs in equity cases, but for the proper understanding of this decision it is important to remember that the Court was dealing with evidence which, while it was immaterial and irrelevant, was not objectionable for any other reason. The following is the practice, as prescribed in Blease vs. Garlington:

"Since the amendment of Rule 67, in 1861, there could never have been any difficulty in bringing a case here upon appeal so as to save all exceptions as to the form or substance of the testimony, and still leave us in a condition to proceed to a final determination of the cause, whatever might be our rulings upon the exceptions. The examiner

[ATTACHMENT]

before whom the witnesses are orally examined is required to note exceptions; but he cannot decide upon their validity. He must take down all the examination in writing, and send it to the court with the objections noted. So, too, when depositions are taken, according to the Acts of Congress, or otherwise, under the rules, exceptions to the testimony may be noted by the officer taking the deposition, but he is not permitted to decide upon them; and when the testimony as reduced to writing by the examiner, or the deposition, is filed in court, further exceptions may be there taken. Thus both the exceptions and the testimony objected to are all before the court below, and come here upon the appeal as part of the record and proceedings there. If we reverse the ruling of that court upon the exceptions, we may still proceed to the hearing, because we have in our possession and can consider the rejected testimony. But, under the practice adopted in this case, if the exceptions sustained below are overruled here, we must remand the cause in order that the proof may be taken. That was done in *Conn v. Penn* (supra), which was decided before the promulgation of the rules. One of the objects of the rule, in its present form, was to prevent the necessity for any such practice. While, therefore, we do not say, that, even since the Revised Statutes, the circuit courts may not in their discretion, under the operation of the rules, permit the examination of witnesses orally in open court upon the hearing of cases in equity, we do say that now they are not by law required to do so; and that if such practice is adopted in any case, the testimony presented in that form must be taken down or its substance stated in writing and made part of the record, or it will be entirely disregarded here on an appeal. So, too, if testimony is objected to and ruled out, it must still be sent here with the record, subject to the objection, or the ruling will not be considered by us. A case will not be sent back to have the rejected testimony taken even though we might, on examination, be of the opinion that the objection to it ought not to have been sustained. Ample provision having been made by the rules for taking the testimony and saving exceptions, parties, if they prefer to adopt some other mode of presenting their case, must be careful to see that it conforms in other respects to the established practice of the court."

This decision was approved and followed in *Nelson v. United States*, 201 U. S., 112-115, in which case, as in *Blease v. Garlington*, the principal objection was the immateriality of the evidence to be considered. On this point MR. JUSTICE MC KEENA said:

[ATTACHMENT]

" The claim of immateriality of the testimony cannot avail plaintiffs against the orders of the circuit court. The procedure before an examiner and his powers are explained in Blease v. Garlington, 92 U.S. 1."

The above are the only decisions of the Supreme Court on this subject, but the leading case of Blease v. Garlington has been construed many times by the Circuit Courts and Circuit Courts of Appeal. There are two classes of cases in which the doctrine of Blease v. Garlington has been applied; (1) where the courts have been asked to compel a witness to answer questions or to produce records or documents in evidence, and (2) those cases in which motion has been made to suppress testimony already taken. We shall consider these two classes of cases separately.

1.

The case of Nelson v. U. S. Supra was of the first class named. The witness refused to answer questions, which the Court had ordered him to answer, and he was attached for contempt. He attempted to justify his refusal to answer on the ground that the matter inquired into was immaterial, but the Court said that under the authority of Blease v. Garlington the answer must go into the record, notwithstanding it was claimed to be immaterial.

Zunkel v. Litchfield, 21 Fed. 196 (1894)

This case was heard on exception to interrogatories. The interrogatories were referred by the Court to a Master for report. There can be no doubt, upon a reading of this decision, that the Court ordered the reference because he

[ATTACHMENT]

considered matters inquired into by the interrogators to be scandalous and impertinent, and that they could not have any bearing on the issues of the case in any view thereof. In the course of the opinion the following statement was made:

" There can be no serious difficulty where the interrogatories involve matter of mere scandal and impertinence, wholly foreign to the controversy. It is well settled practice to refer the pleadings to the Master to purge them of scandal and impertinence. There is no doubt that interrogatories may be referred for the same reason."

Edison Co. vs. U. S. Co., 44 Fed. 294; 45 Fed. 55 (1901). In this case it was sought to compel the production in evidence of an application for patent pending in the Patent Office which it was urged would have the effect of narrowing the claims of the patent sued on. The defense made was that this evidence was privileged and immaterial. The Court found that it was not privileged and that it was sufficiently material to form part of the record under the authority of Hease v. Gaylington.

Lloyd v. Pennie, 50 Fed. 4, (1892): The production of certain letters was opposed on the ground of privilege, but the Court found they were not privileged and compelled their production, "without prejudice to the right of the defendant to renew the claim of privilege hereafter, by a motion to suppress the letters, at the proper stage of the proceedings."

Mrs. William v. Com. Co., 119 Fed. 509 (1902); Production of copies of an abandoned application for patent was opposed on the ground that its subject matter was not relevant or material. The Court compelled its production notwithstanding this objection.

[ATTACHMENT]

Whitehead & Hoag Co. v. O'Callahan, 130 F. R. 243, (1904) In this case a witness was compelled to answer over the objection that the question was not proper cross examination. Apparently the real point in the decision is that in this circuit (Philadelphia) the cross examination need not be confined to the scope of the direct examination and that for this reason the question was proper to be asked.

Perry v. Rubber Tire Co., 138 F. R. 836, (1905):
The syllabus is:

"The general rule is that witnesses whose depositions are being taken under Rev. St. Section 863, should be required to answer all questions which may possibly be material, subject to their right to be protected in their constitutional privileges".

Butte Co. v. Montana, 139 F. R. 843, (1905), The questions certified were required to be answered although it was urged that they were immaterial. (Judge LACOMBE, in his decision in this case, condemned the practice of admitting immaterial evidence in equity suits in the Federal Courts, but considered that he was bound to follow the precedents.)

Dowglas Co. v. Lochren, 143 F. R. 211, C. C. A. 8th Circuit, (1906): This was a case where testimony was being taken in one district for use in another. Application was made to the Court to compel the answer of certain questions by the witness. The Court reviewed Bleassey, Garlington and all subsequent cases and announced the following as its conclusion as to the law on this subject:

[ATTACHMENT]

"It is the province and the duty of the Circuit Court to elicit and transmit to the appellate court, not only the evidence it deems competent, relevant, and material, but also that which it deems incompetent, irrelevant, and immaterial, to the end that, if the reviewing court is of the opinion that the evidence deemed inadmissible by the Circuit Court should have been received, it may at once consider it and render a final decree without the delay of remanding the case to procure the rejected evidence. To this general rule there are two exceptions. They are that it is the duty of the court or chancellor eliciting the evidence to consider and determine the claim of privilege of a witness or other party and to refuse to compel him to produce evidence in violation of it, and that, if it clearly and affirmatively appears that the evidence sought cannot possibly be competent, material, or relevant and that it would be an abuse of the process of the court to compel its production, it may refuse to do so."

II.

Appleton v. Eaubert, 45 F. R., 281, (1891):

This was a patent suit and testimony had been taken of occurrences in the Patent Office before the issue of the patent in suit. Motion was made to suppress the deposition, and to stop the taking of further testimony of this sort but the Court denied the motion because it considered that the testimony might be regarded as material by the Appellate Court.

Adee v. Iron Works, 46 F. R. 39, (1891): In this case certain evidence was suppressed, the reasons are not given.

Fayerweather v. Ritch, 89 F. R. 529;

Parisian Comb Co., v. Eschwege, 92 F.R. 721;

Maxim Co. v. Colts Mfg. Co., 103 F. R. 39;

In these cases, (decided 1898 - 1900), motions to suppress testimony were denied where the objections were that the testimony sought to be struck out was irrelevant and immaterial.

[ATTACHMENT]

Brown v. Worster, 113 F. R. , 20. The Judge regarded it as doubtful whether this testimony sought to have expunged was proper cross examination, and refused a motion to strike it out for this reason, saying that it could be disposed of as a question of costs. As to improper cross examination, he observes, however, "Where the offense is clear, the Court has ample power to stop it summarily."

Thompson-Houston v. Jeffrey Co., 83 F. R. 614: This was a patent suit in which, after a witness had given his direct deposition and was being cross examined, counsel who had produced him objected to the questions asked, and persistently instructed the witness not to answer. The objections made to the questions were that they were immaterial, irrelevant and hypothetical. Motion was made to strike the deposition from the files, or to compel the witness to answer the questions put on cross-examination. The Court, after reviewing the evidence, the questions proposed and the authorities on the subject, says:

"For the reason stated in Blaise v. Gurlington, Courts do not suppress testimony unless it be grossly and flagrantly impertinent and scandalous. The result of suppressing is to expunge the testimony from the record, which would deprive the party affected of opportunity for relief in the Appellate Court."

.....
"I will not say that upon an appeal to a Federal Judge a vexatious, unreasonable, or unconscionable examination of witnesses will not be put a stop to, or that a witness may not, pleading privilege, refuse to answer and make an appeal to a Federal Judge for instructions necessary; but I do say that the assumption by counsel of authority such as has been claimed and exercised in this case will not be tolerated in this court. The motion will

[ATTACHMENT]

be granted. The entire deposition of E. M. Bentley will be stricken from the files, and further testimony for the complainant (its time for testimony in-chief having expired) will be allowed only upon the condition of its first reimbursing the defendants their costs and expenses by reason of the taking of said deposition."

Griffith v. Shaw, 89 F. R., 313; This was a patent suit. Under the undisputed authorities, defendants were estopped from denying the validity of the patent in suit. Nevertheless, they embodied in paragraphs 14 to 18 inclusive of their answer, a denial of the validity of the patent. They then proceeded to take testimony in support of these paragraphs in the answer. Motion was made to strike out such evidence and this motion was granted, the Court saying:"

"The Court may not permit its files to be encumbered and litigants before it to be uselessly and willfully annoyed, harassed and burdened with the taking of evidence plainly inapplicable to the legitimate issues before it, and whose taking is for an entirely different object, one not connected in any manner with the litigation before it."

These authorities clearly show that, while the general rule is that immaterial evidence will not be suppressed on motion when taken in a case in equity in the Federal Courts, yet this rule is subject to two exceptions, and testimony will be suppressed when it appears (1) that such evidence has no bearing whatsoever upon the issues to be decided and cannot possibly be held to have any such bearing by an Appellate Court; and (2) that the evidence so taken is impertinent and scandalous and an abuse of the process of the court. Coming, as it does, within each of these exceptions, we

[ATTACHMENT]

submit that the deposition of Mauro should be expunged from the record.

Defendant may suggest that the determination of this motion should be postponed to final hearing. If it were necessary for the Court to consider the whole evidence in all of the three cases in order to decide this motion it would perhaps be proper that its decision should be put off until that time. But the deposition of Mauro stands out by itself. There is nothing in the case to which it has any relation whatever. Under these circumstances this matter should be determined now, particularly since if in allowing it to remain in the record will necessitate the taking of a great mass of additional testimony which will be useless if it is decided at that time that this deposition should be expunged. In the case of Thompson-Houston Co. v. Jeffrey Co., 83 F. R., 614, above referred to, the court struck out the scandalous testimony on motion as soon as its attention was called to it. This procedure, we submit, is the only adequate way to dispose of this motion.

Of Counsel.

Solicitors for Complainants.

United States District Court,
Southern District of West Virginia,
Benjamin F. Keller, Judge,
Hammock, W. Va.

May 27, 1908



Frank L. Ayer, Esq.,
Orange, N. J.

Dear Sir:

I Enclose you a carbon copy of a letter I
am sending to Messrs. Maunio & Labrie, counsel for
defendants in the Graphophone patent suits, which is
self explanatory. I hope counsel may agree
upon such a stipulation as is suggested in the
letter.

Very truly yours,
Benj. F. Keller
Dist. Judge

[ENCLOSURE]

United States District Court,
Southern District of West Virginia,
Benjamin F. Keller, Judge.

Hammell, Ill. Ill. May 27 1908.

Messrs. Philip Mauro and

C. A. L. Nassie

154 Nassau St., N. Y.

Re National Phonograph Co. v. Am. Graphophone Co. (two suits)
New Jersey Patent Co. v. " " "

Gentlemen:-

I beg to acknowledge receipt of your letter of May 18th., enclosing brief in opposition to the motion of plaintiffs in above suits to expunge a portion of the deposition of your Mr. Mauro, and to say that on the date set for the hearing of this motion Mr. Dyke appeared in support thereof, and I delivered to him a copy of your brief.

While I have not felt justified in sustaining this motion at this time, neither do I feel that I ought at this time to put upon the plaintiffs the present burden of taking any proofs to meet these charges, which can only become material for any purpose in the event that upon final hearing I find reason to believe that these suits were brought in continuation of a course of conduct such as is charged against plaintiff in the deposition. In other words, even if it be true that, in the past, vexatious and harrassing litigations has been instituted by the plaintiff against defendant without equity, yet, unless the court can say that these suits are of that character, no power resides in this court to punish for such conduct.

[ENCLOSURE]

United States District Court,
Southern District of West Virginia,
Benjamin F. Keller, Judge,
Hammwell, W. Va.

2.

It is manifest that this court therefore cannot tell whether a prima facie case has been made for the infliction of a penalty until these cases have been submitted for final hearing and the case been thoroughly gone into. I therefore conclude that I should not now require plaintiffs to meet the matter raised by this deposition, but, without expunging the deposition, allow the whole question to go over until I have heard these cases upon their merits, leaving the questions raised by the deposition, and notice given by Mr. Mauro, pending until I can decide whether Prima facie, these suits are of the character denounced in the deposition. If I consider that they are not, there will be no need to answer Mr. Mauro's deposition. If I decide that this question should, in the interest of justice, be gone into, I see no reason why it may not be done as a supplementary matter, after a hearing of these cases on their merits.

As a matter of course if I should sustain these patents sued on, I could not punish the plaintiffs for bringing these suits, so that it is impossible to say in advance of a determination on the merits, whether the deposition objected to can have any relevancy or materiality.

Having this view, I would suggest that a stipulation as to this matter might be made between counsel to the effect that the matters raised by the deposition and motion of Mr. Mauro and the motion to expunge, be continued until after final hearing, with the right to

[ENCLOSURE]

United States District Court,
Southern District of West Virginia,
Benjamin F. Keller, Judge,
Martinsburg, W. Va.

#3

plaintiff's, in the event that the court should be of opinion that a prima facie case has been made for the imposition of a penalty, to take evidence to answer such prima facie case.

I hope that some such course can be agreed upon, as, if it can not, I shall be obliged to pass an order to that effect, and would greatly prefer that it take the form of a stipulation.

I am sending a carbon copy of this letter to Mr. Dyer.

Very truly yours,

District Judge.

*P.S. After Saturday next I will be in
Charleston, W. Va. for three or four weeks.*

C. A. L. MARRIE
RALPH LANE SCOTT

MAURO, CAMERON, LEWIS & MARX
620 F ST., WASHINGTON, D. C.

PHILIP MAURO
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Patents and Patent Causes
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CABLE ADDRESS: PHMAURO, NEW YORK
LIGONS
CODER USED: WESTERN UNION
MARCOU

NEW YORK May 28, 1908.



Frank L. Dyer, Esq.,
Edison Laboratory,
Orange, N.J.

Dear Mr. Dyer:-

WEST VIRGINIA SUITS. Enclosed find copy of letter I have written to Judge Keller. I will take up my deposition as soon as possible, and advise you of the facts which I wish to have stipulated into the record as made up for final hearing.

Yours very truly,

PM-H.

Philip Mauro

[ENCLOSURE]

May 28, 1908.

Hon. Benjamin F. Keller,
United States Judge,
Bramwell, W. Va. *Wva suits*

Dear Sir:-

NATIONAL PHONOGRAPH CO. v. AMERICAN GRAPHOPHONE CO.,
(On Miller and Aylsworth Patent);

SAME v. SAME, (On Aylsworth and Miller Patent);

NEW JERSEY PATENT CO. v. AMERICAN GRAPHOPHONE CO.,
(On Joyce Patent).

With reference to the motion of complainants in these cases to exclude the deposition of Mr. Mauro taken on behalf of defendant, I have had a talk today with Mr. Dyer, complainants' counsel, as the result of which we are both of the opinion that we can arrange a stipulation which will satisfactorily dispose of the matters raised by this motion. At Mr. Dyer's request, I am writing this to save you the trouble of giving any further consideration to the matter until you hear from one or the other of us again. I am sending a copy of this letter to Mr. Dyer.

Very respectfully,

(Sgd) Philip Mauro

Of Counsel for Defendant.

P.S. Since writing the foregoing, your letter of the 27th inst. has been received. It would seem that counsel had forestalled your Honor's suggestions; or vice versa, as your letter was written first.

Legal Box 171

United States Circuit Court
SOUTHERN DISTRICT OF WEST VIRGINIA

NATIONAL PHONOGRAPH COMPANY,
Complainant, } In Equity on
vs. } Letters Patent
AMERICAN GRAPHOPHONE COMPANY,
Defendant. } No. 688,615.

NATIONAL PHONOGRAPH COMPANY,
Complainant, } In Equity on
vs. } Letters Patent
AMERICAN GRAPHOPHONE COMPANY,
Defendant. } No. 683,676.

NEW JERSEY PATENT COMPANY,
Complainant, } In Equity on
vs. } Letters Patent
AMERICAN GRAPHOPHONE COMPANY,
Defendant. } No. 831,668.

CONSOLIDATED RECORD

PRICE, SMITH, SPILMAN AND CLAY,
Solicitors for Complainants.

FRANK L. DYKE,
HERBERT H. DYKE,
Of Counsel for Complainants.

PHILIP MAURO,
C. A. L. MASSIE,
Solicitors and of Counsel for Defendant.

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DEFENDANT'S PROOFS.

IN THE CIRCUIT COURT OF THE UNITED STATES.

Southern District of West Va.

10	NATIONAL PHONOGRAPH CO.	In Equity, on
	vs.	Miller & Aylsworth
	AMERICAN GRAPHOPHONE CO.	Patent No. 683,615.
	NATIONAL PHONOGRAPH CO.	In Equity, on
	vs.	Aylsworth & Miller
20	AMERICAN GRAPHOPHONE CO.	Patent No. 683,576.
	NEW JERSEY PATENT CO.	In Equity, on
	vs.	Joyce Patent
	AMERICAN GRAPHOPHONE CO.	No. 831,658.

New York, January 3, 1908.

30 Testimony for defendant, taken at the office of Philip Mauro, Esq., 154 Nassau Street, New York City, N. Y., before Ralph L. Scott, Notary Public in and for the County of New York, acting as Special Examiner by consent, on Friday, January 3, 1908, at 2 p. m.

Met pursuant to agreement.

Present:

HERBERT H. DYKE, Esq., for complainant;
40 PHILIP MAURO, Esq., for defendant.

It is stipulated and agreed by and between counsel for the respective parties as follows:

1st. That the three cases entitled above shall be consolidated as far as concerns the taking of proofs.

2nd. That either party may introduce any deposition or depositions, or any exhibit or exhibits in the suits which were brought in the United States Circuit Court for the District of Connecticut by the National Phonograph Company against the American Graphophone Co. based respectively on Edison molded record patents Nos. 697,662 and 713,299, subject to any objections that may be offered as to their materiality, etc.

3rd. It is stipulated and agreed that printed official copies of U. S. patents and British patents may be introduced in evidence with the same force and effect as if duly certified, and that the date of filing printed on copies of the U. S. patents shall be taken to be the correct filing date, subject to proper correction of inaccuracies, if any.

Pursuant to the foregoing stipulation, counsel for defendant offers in evidence as part of defendant's proofs herein, depositions of E. E. Norton, T. H. Macdonald, A. A. Stevenson, F. H. Osborne, taken in the suits entitled above on January 13 and 14, 1903. Also Defendant's Exhibit, Photograph 1895 Mold, Defendant's Exhibit, Photograph 1899 Mold, No. 1 and No. 2.

Counsel for defendant states that the molds whereof these exhibits are photographs, are now in evidence in a suit between William Herbert Smith and the American Graphophone Co., pending in the Supreme Court of the District of Columbia, and defendant's counsel wishes to reserve the right to introduce the same in this case if available at any time before the hearing.

Defendant's counsel also offers in evidence, as an exhibit for defendant herein, the deposi-

tion of Thomas A. Edison, Esq., taken in the above-entitled suits at West Orange, New Jersey, Oct. 9, 1903.

It is agreed that counsel for complainant shall have the right after an investigation, to enter objections if so desired, to the foregoing portions of the record of the Connecticut cases.

And thereupon THOMAS H. MACDONALD, a witness produced on behalf of defendant, being first duly sworn, deposes and says as follows:

Q. 1. Please state your name, age, residence and occupation?

A. Thomas H. Macdonald; age, forty-eight; residence, Bridgeport, Conn.; occupation, Manager of the Factory of the American Graphophone Co.

Q. 2. Are you the same Thomas H. Macdonald who invented the molded record process patented in patent No. 682,991?

A. I am.

Q. 3. And the same Thomas H. Macdonald who gave a deposition in the molded record suits on the Edison patents?

A. I am.

Q. 4. You have already given a deposition for the complainant in the above-entitled suit based on the Joyce patent, for the purpose of identifying the process in use at defendant's factory during the period covered by the complaint herein. I understand that substantially the same process has been used by the defendant throughout the period covered by these cases, to wit, from Oct. 1, 1901, down to the present time. Is that correct?

A. That is correct.

Q. 5. What are the salient or essential steps which are practiced in making sound-records by the defendant's process (hereafter to be understood as the process in use at defendant's factory during the period above specified)?

A. The first step is to fill the mold with the

liquid or molten wax. The mold and the wax are then raised to a temperature substantially above the melting point of the wax. It is allowed to remain at this temperature for a definite period of time until all ebullition or bubbling has ceased and the wax is thoroughly limpid. It is then removed and the mold is immersed in cold water. As the second step, chilling the mold (and consequently the wax in contact with it) from the outside. The next step is to remove the core, and after this the surplus material in the center of the wax mold is removed by a scraper, and the mold is then chilled down to normal temperature by being placed in an air blast. The molded record is removed, the ends cut off, and when entirely cold, usually the next day, it is placed in a machine which holds it on the outside on each end. It is then runned the size to fit the mandrel of the talking-machine, and is then ready for the market.

Q. 6. In the molding operation, as you have described it, have or have not the three steps of (1) superheating the molten material while in the mold, (2) maintaining the superheated temperature, (3) suddenly and symmetrically chilling from the outside, been always practiced in the manufacture of molded records by the American Graphophone Co.?

A. They have.

Q. 7. How high above the melting point of the wax-like material is it heated?

A. From 120° to 150° Fahrenheit.

Q. 8. How long on an average is this superheated temperature maintained?

A. About five minutes for each mold.

Q. 9. Is it correct, according to your experience, to obtain commercial molded records by your process without employing these three steps enumerated above?

A. It is not.

Q. 10. How much attention have you given to practical experimentation with reference to the production of molded records?

A. I have devised the various processes used by the American Graphophone Co. and have directly supervised their operation in the making of many millions of records during the last seven years. I have carried on continuous experiments for a space of nine years and have tried every process I could think of. I have been engaged directly in experimenting on this work almost daily during that time.

Q. 11. Who has devised the machines and processes employed by the American Graphophone Co. in the manufacture of talking machines and sound-records during the past fifteen years?

A. I have.

Q. 12. Have you read the specification of the Miller & Aylsworth patent in suit No. 683,615?

A. I have read it.

Q. 13. Do you understand the process described and claimed in that patent?

A. I do.

Q. 14. Does the American Graphophone Co. use the process described and claimed in that patent, or has it ever done so?

A. They do not use it and they have never done so.

Q. 15. You have stated that it is essential for the production of a sound-record by your process that the temperature of the wax should be raised to about 150° or more above its melting point; how is it with reference to the temperature of the wax in the Miller & Aylsworth process?

A. It is necessary in this process, that is, the Miller & Aylsworth process, that the temperature of the wax should be maintained at a point barely

above the melting point—just slightly more than the melting point.

Q. 16. With reference to the temperature of the mold, what is necessary in the Miller & Aylsworth process, and compare it with your process in that respect?

A. In the Miller & Aylsworth process, it is necessary that the temperature of the mold should always be less than the melting point of the material. It must never be equal to or above it at any time. This is made necessary from the fact that the process utilizes this cold mold for chilling the material and setting it the instant it touches the surface of the mold. In the process which I have devised and used in the American Graphophone Co., the mold is heated to a point approximately 150° above the melting point of the wax. The mold is allowed to remain in this state, also the wax, for a period of about five minutes, this for the purpose of allowing the wax to become fluid and all bubbles to rise.

Q. 17. In the Miller & Aylsworth process, what would happen if the mold were left in the vat until heated above the temperature of the melted wax before it was withdrawn?

A. They would not obtain a record if the mold were allowed to come to the temperature of the wax, for the wax will not congeal on its surface, and when lifted out the wax would run back to the vessel. There would be no record.

Q. 18. What is necessary in carrying out the Miller & Aylsworth process with reference to the duration of the time the mold is allowed to remain in the melted material, and compare with your process in that respect?

A. In the Miller & Aylsworth process the mold must remain but a short time in the material. If it were allowed to remain a substantial time the mold

would become the same temperature as the melted material. There would, of course, be no chilling or congealing of the material upon the surface of the mold, and so there would be no cast or record. It is therefore necessary to remove the mold before it can be heated up to the melting-point temperature of the wax. In my process, used by the American Graphophone Co., the mold is left in the material until the entire mold and its tray which holds it, is raised to the temperature of the superheated wax. It is then removed, the mold acting as a cup for holding the melted wax is placed in water which chills it, and thus produces the molded record.

Q. 19. In the Miller & Aylsworth process is it essential that the record forms,—that is, that the material solidifies while the mold is in the vat?

A. It is, in their process; the sound-record is actually formed and completed while the mold is immersed or in the liquid wax.

Q. 20. In your process, is it possible to do this even if you wanted to?

A. It is not possible to do it even if I wanted to. The molded record in my case must be formed after the mold is removed from the melted material. It is actually made during the process of solidifying in the cold water.

Q. 21. In the Miller & Aylsworth process is it necessary to insert the mold in the melted wax in a particular way, and if so, in what way; and compare with your process in that respect?

A. In the Miller & Aylsworth process it is necessary to immerse the mold in the molten wax in such a manner that the wax will flow up and along the bore of the matrix smoothly and uniformly. If this is not done, rough spots and blisters would appear upon the surface of the record, as the material chills practically the instant it touches the surface of their cold mold. In my process, used by the

Graphophone Co., the material is thrown in the mold in any convenient way. In actual practice it is filled by dropping the mold six to eight inches below the surface of the wax and allowing the material to flow in over the top as rapidly as it can. This is possible from the fact that the material does not congeal when it strikes the sides of the mold. But the mold being raised in temperature by the superheated material, the liquid wax is brought in contact with every part of the surface to be chilled afterwards in the cold water bath.

Q. 22. In practicing the Miller & Aylsworth process, is it necessary to protect any part of the surface of the mold; and if so, please compare with your process in that respect?

A. In the Miller & Aylsworth process it is necessary to protect the outside of the mold and to keep it away from the melted wax, otherwise the wax on both sides of the mold would heat it to such a point that the material would not congeal on the bore, the material being allowed to touch the inside of the mold only. In my process just the reverse is true. We desire the hot liquid wax to be brought against the outside of the mold for the purpose of raising the temperature of the mold itself well above the melting point of the wax.

Q. 23. In Claims 3, 4 and 5 of the Miller & Aylsworth patent, which are the Claims involved in this suit, reference is made to immersing a mold in molten wax-like congealative material, whereby the material will accumulate on the bore of the mold. What method of immersing the mold in wax is described in this specification whereby the specified result is accomplished?

A. I take it that this means that the mold is lowered slowly into the wax-like material, allowing it to flow uniformly and evenly along the bore of the mold, congealing as it meets the surface, be-

ing then withdrawn before the mold has time to acquire the temperature of the wax. But this expression of immersing the mold, as quoted in the patent, does not seem to me to describe the process, at least as I understand immersing, for the description indicates that only a part of the mold is actually touched by the liquid, and I think it would hardly be correct to state that where only the inside is touched by the liquid, that the body was immersed.

Q. 24. In defendant's process is the mold lowered or dipped into the melted material in the way specified in the Miller & Aylsworth patent as just described by you?

A. It is not. In the defendant's process the mold is actually immersed in the liquid wax, that is, it is placed below the surface of the wax, so that it comes in contact with every part of the mold inside and out, and is there allowed to remain. In the Miller & Aylsworth patent, according to the process as therein described, the mold is so protected that the wax only comes in contact with the inner bore of the mold.

Q. 25. In practicing the Miller & Aylsworth process, what is the importance of lowering the mold gently so as not to produce agitation of the liquid?

A. In this process the wax congeals upon the surface of the bore the instant it touches it. To produce a perfect cast, therefore, it is necessary to introduce it gently, so that this molten wax will flow uniformly and smoothly over the surface of the matrix. That is, the bore of the matrix. If it were introduced while the liquid were in agitation, or dropped violently or rapidly into the wax, this result would not be obtained.

Q. 26. In defendant's process is the mold introduced gently so as to avoid agitation of the liquid material?

A. It is not, it is dropped quickly below the sur-

face, the material allowed to flow in as it may.

Q. 27. In defendant's process what means are employed for introducing the liquid material into the mold?

A. A tray of molds, usually containing eight, is suspended above a kettle of molten wax, the tray is supported by a chain passing over a pulley to which a counter-weight is attached. The tray of molds, which is placed on the apparatus, is lowered by the workmen quickly below the surface of the wax. It is allowed to remain there for a period of five minutes, which is sufficient to heat the mold to substantially the temperature of the wax. It is then lifted out and set in a cold water bath to be chilled.

Q. 28. How does your method of getting the material into the molds differ from filling a bucket in a well, for instance?

A. It does not differ at all, the process is almost identical.

Q. 29. Would it be possible with the means you employ in defendant's process, to practice the Miller & Aylsworth process?

A. It would not.

Q. 30. Referring to the Joyce patent, No. 831,068 in suit, I read, beginning line 100, page 1, of the specification, as follows: "The mold, core and base are slightly oiled, and then heated preferably to near the temperature of the melted wax." What do you understand by that?

A. I understand that he heats his mold by some outside source, possibly a direct flame, before introducing the wax into the mold.

Q. 31. What do you understand by the words "to near the temperature of the melted wax"?

A. I understand that to mean slightly below the temperature, not quite so hot.

Q. 32. Have you read the specification of this patent, and do you understand the process as described?

A. I have read it, and understand the process. Q. 33. In carrying out the defendant's process, is, or is not, the mold heated to near the temperature of the melted wax before the wax is introduced into it, or heated at all prior to that time?

A. It is not heated at all.

Q. 34. Is there in that specification, any means described for getting rid of air bubbles and other things that would produce defective sound-records?

A. There is not.

Q. 35. Would or would not the description contained in this specification be sufficient to enable one skilled in the art to make commercial sound-records without additional information or without further invention?

A. There is not sufficient information here, and it would not be possible to make commercial sound-records from this description without further or additional invention.

Adjourned to Monday, January 6, 1908, at 11 o'clock a. m.

New York, January 6, 1908.

Met pursuant to adjournment.

Present:

FRANK L. DYER, Esq., for complainant.

PHILIP MAURO, Esq., for defendant.

By Mr. MAURO:

Q. 36. Referring again to the Joyce patent, do you know whether it was or was not novel at the date of the Joyce application to pre-heat a mold in which wax-like material was molded?

A. It was not new, but was a common practice to do this.

Q. 37. Is there, or is there not, any advantage in heating a mold in which sound-records are to be molded to about the temperature of the melted wax as described in the Joyce patent?

A. There is not.

Q. 38. You have stated that it would not be possible with the means employed in your process to practice the Miller & Aylsworth process. Please state whether it would be possible with the means described in the Miller & Aylsworth patent to practice your process?

A. It would not be possible.

Q. 39. In your deposition given in the Connecticut suits which has been introduced into this suit, Mr. Frank L. Dyer, who is now present, asked you this question: (x-Q. 32) "In view of the fact that your 1895 mold shows a steam jacket for heating the mold, why did you adopt the clumsy expedient in the 1899 mold of heating the mold by superheated wax?" To which you replied: "A. Merely to obtain the effect of a higher temperature than could be obtained from steam, and also to obtain varying temperatures; and I do not regard the method as clumsy." Please state in what respects, if any, the process now practiced by defendant and involved in this case differs from what Mr. Dyer was pleased to call the "clumsy expedient" used by you in 1899?

A. The process used by me in 1899 and referred to in that question is the same as that used by the defendant at the present time, and has been so used by them for the past seven years.

Cross-examination by Mr. DYER:

x-Q. 40. Referring to your answer to Q. 14, in which you state that the American Graphophone Co. has never used the process described and claimed in the Miller & Aylsworth patent No. 683, 614, do I understand that you appear as a patent expert in this case, or that you are qualified to ex-

press the usual opinion that patent experts are called upon to express in patent suits?

A. I am not certain as to the qualifications of a patent expert. My answer, as given there, was based upon my knowledge of the business, my familiarity with the making of mottled records. If that exact knowledge constitutes expert knowledge, then it is the same.

10 x-Q. 41. I assume that all you did was to read the Miller & Aylsworth patent, and having found that it described a certain process which differed from the process you used, you concluded from that fact that the American Graphophone Co. had not used any process that was described and claimed in that patent?

A. I have not only read the patent carefully, but I have tried to carry on experiments under this patent as I usually do under every patent that is issued that seems at all interesting, and from the knowledge I gained from the experiments and the reading of the patent I gave the answer which I did.

20 x-Q. 42. You have not, as I understand it, ever testified as a patent expert, that is, as a person qualified to explain the meaning of patent specifications and claims for the benefit of the Court?

A. Not to the best of my knowledge and belief.

30 By Mr. DYER: In view of previous answers the answer to Q. 14 is objected to as incompetent.

x-Q. 43. You state that the process now used by the American Graphophone Co. in substantial respects has been continuously carried out since prior to Oct. 1901. It is a fact, is it not, that up to some time in 1903 the process used by the Graphophone Co. involved the employment of steam-heated molds substantially as suggested in your patent No. 682, 40 391, referred to in answer to Q. 27?

A. Both processes were used. I am not certain, at this time, when the steam molds were finally discontinued, though the method of making mottled records by the process of heating the mold with the wax was used more or less constantly from the very beginning of my work.

x-Q. 44. When you refer to the fact that the molds were heated by the use of hot wax in your early work, you have reference, have you not, to the experimental apparatus that was introduced in the Connecticut suits on the Edison patents, where hot or super-heated wax was poured into a jacket surrounding the mold, in somewhat the same way as the steam was introduced in the molds as used by you at that time?

A. I used the 1899 mold in this manner. Experiments were made with this mold, however, of setting it in the hot wax, and of dipping the mold in wax the same as we are doing it now, etc. In fact the only reason for going from the steam molds was to save the material of which the records were made. Of course when the tray is lifted out of the wax it is covered with the record material, and when the tray is set in water this material is lost, and I considered that this would be a substantial item in large work, and it was for that reason I devised the scheme of superheating the mold through the use of steam. This, however, was found after use to be not so good in its ultimate results, and we went back to the original scheme which has been used ever since.

x-Q. 45. As I understand the history, therefore, of your work, you started out by using a mold having a jacket into which you introduced the super-heated wax, and having found that with such an apparatus there was a substantial loss of the wax used for the purpose of superheating, you adopted the use of steam for superheating purposes, and that

later on you adopted the present excellent of employing a plurality of relatively thin molds on a tray and immersing below a large body of wax maintained at a high temperature. Is that correct?

A. Except in the reference to the thin molds. The molds subsequently used were no thinner than those used originally.

x-Q. 46. These molds are about $\frac{1}{4}$ of an inch thick, are they not?

A. Not quite as thick as that, I should judge; I think less than $\frac{1}{4}$, not over $\frac{3}{32}$, I should think.

x-Q. 47. In your answer to Q. 5 describing the process now carried on by defendant, you state that after the core is removed "the surplus material in the center of the wax mold is removed by a scraper." It is a fact, is it not, that in removing this surplus material the scraper also forms a series of concentric rings on the inside of the record?

A. It does.

x-Q. 48. And the subsequent ranning you refer to in the same answer, consists, as I understand it, of scraping off the inside of these concentric rings so as to make the record fit the mandrel?

A. That is right.

x-Q. 49. This expedient of forming the records with concentric rings was adopted in 1903, was it not?

By Mr. MAURO: Objected to as immaterial.

A. I cannot recall the date of that adoption. It was somewhere about that time.

x-Q. 50. And before that time, the records made by the American Graphophone Co. had been formed with spiral rings on the inside?

Same objection.

A. They were.

x-Q. 51. You state in answer to Q. 7, that the wax-like material used by you is heated from 120° to 150° Fahrenheit above its melting point. Can you tell me what the actual temperature is that you employed?

A. About 400° Fahrenheit. The melting point of this material is rather vague, as it goes from a solid to a semi-plastic condition, gradually approaching a liquid condition through a molasses like consistency.

x-Q. 52. I infer from the fact that you used the material at a temperature of about 400°, that its melting point exists somewhere between 250° and 280° Fahrenheit?

A. That has been my assumption.

x-Q. 53. Would it be possible, by your process, to obtain satisfactory duplicate records if the temperature of the material was somewhat lower than that you have mentioned?

By Mr. MAURO: Question objected to as indefinite.

A. How much lower?

x-Q. 54. I would like to know generally, if you can tell me, what you regard as the minimum superheating that it is necessary to impart to the wax to produce satisfactory records by the specific process that you use?

A. After a considerable number of experiments I established the temperature at 400°, so I consider that the minimum temperature practical to use in this process. As to the question of the possibility of obtaining records at a lower temperature, of course it is possible to do so. I presume that an experimenter would succeed in getting records. Our experiments, however, have convinced us that 400° was about right, and we have maintained that.

x-Q. 55. I understand that you have used sub-

stantially the same material at all times, except that since some time in 1903 you have employed certain proportions of Carnauba wax?

A. We have.

x-Q. 56. Did the employment of this Carnauba wax necessitate changing the process at all?

A. It did not.

x-Q. 57. You regard the process that you used in 1902 with the steam-heated molds as entirely practical, do you not?

A. It is practical.

x-Q. 58. Do you recall the fact that with that process you used a temperature of only 350°?

A. About that.

x-Q. 59. So that it is possible to obtain commercial results by using the wax as low as 350°, as I understand it?

A. It is possible.

x-Q. 60. Your process would be the same, would it not, whether the molds were introduced rapidly or slowly into the wax, except, of course, for the element of time?

A. The result would be the same.

x-Q. 61. Do you find any statement in the Joyce patent in suit that the mold is heated by a direct flame?

A. I do not recollect that.

x-Q. 62. In the early part of your examination this morning you refer to the fact that the superheating of molds was not novel at the date of the application for the Joyce patent. Was this true of molds used for making phonograph records?

A. It was true of molds for molding wax cylinders.

x-Q. 63. That is, wax blanks?

A. Yes.

x-Q. 64. I presume that you have in mind the experimental work done with the 1895 mold, making

blanks, that was referred to in the Connecticut suits?

A. I have reference to that, and also to processes common in the arts of molding the wax cylinders, such as candles.

x-Q. 65. Mr. Mauro has put on the record a question which was asked you in the Connecticut suits, where, in referring to your 3300 mold in which the superheated wax was poured into a jacket, I referred to it as a "clumsy expedient." Of course, there is a very marked commercial difference, is there not, between such an apparatus and one such as you now use where a series of eight molds are directly immersed in the superheated wax?

A. There is a difference, yes.

x-Q. 66. One is a highly commercial process, and the other would be of doubtful commercial utility, would it not?

A. No, I would not consider it of doubtful commercial utility; it can be used very well.

DEPOSITION CLOSED.

Signature of witness and certificate of magistrate waived.

STIPULATION.

It is STIPULATED by and between counsel for the respective parties hereto, subject to correction in case of error and subject to the objections hereafter made, that if PHILIP MAURO were examined as a witness for the defendant, he would testify that he has been chief patent counsel for the said defendant for the past fifteen years and over, and as such is thoroughly familiar with all its patent litigation; and that from such personal knowledge he makes the following statements:

I.

Beginning at least as early as during the year 1899, the defendant American Graphophone Company has carried out substantially the same process it is now using in molding cylindrical sound-records, as testified to herein by Thomas H. Macdonald —beginning at a period earlier than the date of issue of any of the patents upon which these complainants have sued this defendant (or its selling-agent) on account of its said molded sound-records.

II.

The complainants herein have brought against the defendant herein (or its selling-agent), on account of defendant's said molded sound-records, eight patent suits, as follows:

1. National Phonograph Co. v. American Graphophone Co., on Edison patent No. 667,602, granted Feb. 5, 1901, (application filed May 8, 1900).

Dec. 27, 1901, bill filed in District of Connecticut.

Feb. 3, 1906, bill finally dismissed.

2. National Phonograph Co. v. American Graphophone Co., on Edison patent No. 713,209,

granted Nov. 11, 1902, (application filed March 5, 1898).

Jan. 5, 1903, bill filed in District of Connecticut.

Feb. 3, 1906, bill finally dismissed.

3. National Phonograph Co. v. American Graphophone Co., on Miller & Aylsworth patent No. 683,615, granted Oct. 1, 1901, (application filed July 31, 1900) (one of the patents here in suit).

Oct. 24, 1903, bill filed in District of Connecticut.

June 24, 1905, bill dismissed by consent.

4. National Phonograph Co. v. American Graphophone Co., on Aylsworth & Miller patent No. 683,676, granted Oct. 1, 1901, (application filed July 31, 1900) (one of the patents here in suit).

Oct. 24, 1903, bill filed in District of Connecticut.

June 24, 1905, bill dismissed by consent.

5. National Phonograph Co. v. American Graphophone Co., on Miller & Aylsworth patent No. 683,676 (same as in No. 3).

July 7, 1905, bill filed in Southern District of West Virginia (one of the present suits).

6. National Phonograph Co. v. American Graphophone Co., on Aylsworth & Miller patent No. 683,676 (same as in No. 4).

July 7, 1905, bill filed in Southern District of West Virginia (the second of the present suits).

7. New Jersey Patent Co. v. Columbia Phonograph Company, General, on Aylsworth patent No. 732,375, granted Feb. 14, 1905, (application filed Nov. 3, 1903).

April 3, 1905, bill filed in District of New Jersey.

June 12, 1908, bill dismissed by consent.

8. New Jersey Patent Co. v. American Graphophone Co., on Joyce patent No. 831,668, granted Sept. 25, 1906, (application filed Oct. 23, 1897).

Dec. 20, 1906, bill filed in Southern District of West Virginia (the third of the present suits).

Defendant had been manufacturing its molded sound-records continuously, by the same process it is now using, for several years before any of these patents issued.

III.

The file-wrappers of the Edison patent No. 713,209 (No. 2 above) and of the Joyce patent here in suit (No. 8 above) show the following facts:

That on March 8, 1902, the Patent Office Examiner suggested to Thomas A. Edison, in his then pending application, Serial No. 672,630, filed March 5, 1898, (which eventuated in the Edison patent No. 713,209—No. 2 above) certain claims then found in the said Joyce application, Serial No. 635,027, filed Oct. 13, 1897 (which eventuated in the said Joyce patent No. 831,668, here in suit—No. 8 above); of which the second suggested claim, found on printed page 595 of the Transcript on Appeal in the said Connecticut suit No. 2, is identical word for word with the then Joyce Claim 5,—other claims suggested to Edison in the same office letter being for the same substantive invention, but differing in phrasing. The said Joyce Claim 5, found on page 440 of the said Transcript and thus suggested to Edison, is as follows:

"5. The method of producing hollow cylindrical phonograms which consists in obtaining a mold having a reverse phonogram recored on the inner wall of a cylindrical opening, form-

ing a hollow cylindrical plastic phonogram within said mold, releasing the phonogram from the mold by a difference of temperature between the mold and phonogram sufficient to entirely clear the surfaces, and removing the phonogram from the mold by direct longitudinal movement."

That on March 10, 1902, (as appears on page 596 of said Transcript) Edison, by amendment, incorporated into his said application (No. 672,630) the Claims thus suggested to him from the Joyce application, the Edison Claim 2 then presented being identical with Joyce's Claim 5 above quoted.

That thereafter, by subsequent amendment to his said application, on April 24, 1902, (as appears on page 599 *et seq.* of the said Transcript), Edison presented a *substitute* Specification and Claims,—his above-named Claim 2 (identical with Joyce's said Claim 5) being re-framed as Claim 3, and a new Claim 2 being inserted for the same subject-matter; and (on page 611 of said printed Transcript) in regard to said amendment Mr. Edison's attorneys said:

"NOTE: The claims above presented are the same as those which have been annexed, except that a new second claim has been added, expressing the radial contraction of the duplicate from the matrix in somewhat broader terms than the former second (present third) claim; the latter claim has been also changed in language so as to more clearly express the invention. * * *"

That thereafter, on June 24, 1902, an Interference No. 21,893, was declared between the said Joyce pending application (that eventuated into the Joyce patent here in suit—No. 8 above) and

the said Edison pending application (that eventuated into the Edison patent No. 713,209,—No. 2 above). The issue of the interference was whether Joyce or Edison was the true and first inventor of the subject-matter, which as formulated included two "Counts," corresponding to Edison's Claims 2 and 3 aforesaid, and the then Joyce Claims 9 and 5 respectively.

- 10 That thereafter, on or about the said Joyce filed, in favor of the said Edison, his concession of priority as to the said issue thus involved in the interference; that on or about Oct. , 1902, the said Joyce, by an instrument in writing duly executed and delivered, assigned his said invention and application to the National Photograph Co. (one of the complainants herein); that on Oct. 10, 1902, the said instrument of assignment was forwarded, by Messrs. Dyer, Edmonds & Dyer (Edison's attorneys), to the Patent Office for recording; and the said instrument was duly recorded in the United States Patent Office on Oct. 11, 1902. That judgment of priority in favor of the said Edison and against the said Joyce application having been rendered by the Patent Office, thereupon, on Oct. 16, 1902, the aforesaid Claims 5 and 9 of the said Joyce application S. N. 655,927, were finally rejected; and on Oct. 27, 1902, said Claims 5 and 9 of the said Joyce application were canceled. That on Jan. 21, 1903, all the rest of the Claims of the said Joyce application were rejected on the Edison patent No. 713,209, which had issued as the result of the said Edison application aforesaid; that in March, 1903, Frank T. Dyer, Esq., (Mr. Edison's attorney, and counsel for the complainants herein) was appointed associate attorney for the further prosecution of the said Joyce application; in the meantime, and beginning on April 30, 1902, the said National Photograph Co.

had taken its *prima facie* proofs in suit No. 1 above, closing the same on May 7, 1902, and the defendant had taken as its answering proofs, beginning Oct. 21, 1902, the testimony of Miller, Aylsworth, Cameron, Norton, Macdonald, Stevenson, Brynes and Osborne.

That on Dec. 22, 1905, and after all of defendant's proofs in both of the Connecticut suits aforesaid (Nos. 1 and 2) had been taken and closed, Mr. Dyer (as Joyce's attorney) canceled all the Claims then remaining in the Joyce application, and presented the Claims now appearing in the Joyce patent in suit; that on Jan. 6, 1906, Claims 3, 4, 5 and 6 (being the same Claims 3, 4, 5 and 6 now appearing in the Joyce patent) were rejected by the Patent Office on the said Edison patent No. 713,209 (particularly Claims 2 and 3 thereof); and that, in response to this rejection, Mr. Dyer (as Joyce's attorney) presented the arguments referred to by defendant's witness Massie in answer to Q. 9.

That the said Edison application S. N. 672,650, containing the Claims thus taken from the Joyce application, was issued as patent No. 713,209, dated Nov. 11, 1902; that the National Photograph Company sued the defendant on the last-named Edison patent, being suit No. 2 above; and that the Claims involved were the aforesaid Claims 2 and 3 thereof that had been thus taken out of the said Joyce application.

IV.

That the suit No. 2 above referred to, brought against the defendant in the District of Connecticut on the Edison patent No. 713,209, aforesaid (together with suit No. 1 on Edison patent No. 667,662), came on to be heard before his Honor Judge PLATT in June, 1904; and that on or about March 17, 1905, a written opinion was filed, the

same being reported in 135 F. R. 809; and that pursuant to said opinion Final Decrees were entered on March 30, 1905, dismissing the two bills of complaint with costs to defendant.

That thereafter the said National Phonograph Company perfected its appeals from said final decrees, but on or about Dec. 6, 1905, voluntarily dismissed its said appeals; and in the meantime, on or about June 21, 1905, the said suits Nos. 3 and 4, on the Miller & Aylsworth and Aylsworth & Miller patents respectively (here in suit), then pending against the said American Graphophone Company in the District of Connecticut, were likewise voluntarily dismissed by the said National Phonograph Company.

The paragraph numbered I. is objected to for the reason that it is a mere conclusion and is incompetent, irrelevant and immaterial.

In the paragraph numbered II., subheades 1, 2, 3, 4 and 7 and the last 3 lines of said paragraph (following subhead 8) are objected to as irrelevant and immaterial.

The paragraphs numbered 3 and 4 are each objected to as irrelevant and immaterial as matter of argument and as not the best evidence.

FRANK L. DYER,
Counsel for Complainants.

C. A. L. MASSIE,
Counsel for Defendant.

New York, January 8, 1908.

DEPOSITION OF C. A. L. MASSIE.

Deposition taken by consent of counsel in the absence of counsel for complainant subject to objection and cross-examination by him.

C. A. L. MASSIE, being duly sworn, deposes and says as follows:

I am forty years of age. I reside in Hackensack, New Jersey, and have an office in the City of New York. I am an Attorney and Counselor at Law, making a specialty of patents and patent causes, and I am a registered patent solicitor and a member of the firm of Mauro, Cameron, Lewis & Massie, of Washington, D. C., and New York, N. Y.

Q. I. Please state what experience you have had that qualifies you to testify regarding the three suits above-entitled?

A. After academic and collegiate education, and some years experience as a school teacher, early in 1904 I became an Assistant Examiner in the United States Patent Office. For nearly four years it was my daily duty in the Patent Office to examine applications for patent, involving the study of earlier patents and publications, the consideration of the Specifications, Drawings and Claims of the Patent Office applications and of earlier patents.

In January, 1898, I became associated with Philip Mauro, Esq., senior counsel for complainant herein, and was placed in charge of our New York office. During the past ten years I have paid more attention to the talking-machine art and the patents relating thereto than to any other art. I have prepared and prosecuted a great many applications for patent in various arts, but particularly in the talking-machine art. I have also acted as of counsel for the American Graphophone Company in nearly all the

patent suits in which it has been involved during the past ten years.

I believe myself familiar in a general way with the patents that have been granted in this art, and also in a general way I consider myself familiar with the practical developments of this business during the past ten years. I believe I am acquainted with most of the technical terms employed in this art.

Q. 2. Have you read the Joyce patent No. 831,668 and the Miller & Aylsworth Process patent No. 688,615, sued in two of the above-entitled suits; and, if so, do you understand the same?

A. I have read the two patents named and I believe I understand them.

Q. 3. Have you read complainant's *prima facie* proofs in each of the three suits, above-entitled, including the stipulations of defendant's counsel therein; and, if so, do you understand the process therein set forth as the one practiced by defendant in making molded cylinder records?

A. I have read the same, and I believe I understand the process therein set forth as defendant's process.

Q. 4. Please state briefly the gist of what you understand is set forth by Claims 3, 4 and 5 of the said Joyce patent and by Claims 3, 4 and 5 of the said Miller & Aylsworth Process patent, and compare the same broadly with the process practiced by defendant?

A. Broadly stated, the process of each of the two patents inquired of is the casting of a suitable material into a suitable mold to produce an article of a certain shape and having certain inherent qualities. The shape of the article depends upon the shape of the mold. The inherent qualities of the article depend upon the inherent qualities of the material employed for making the casting.

And, also, broadly stated, the process in each case consists in introducing the material in a molten state into the mold. All this is true of every casting process, whether the object of the process is to make sound-records or to make candles, or to make any other casting,—namely, a suitable mold is provided and the material (in a molten condition) is introduced into the mold. Up to this point the foregoing remarks are also true of what is set forth in the *prima facie* proofs as "defendant's process." But there is nothing so far stated by me that relates particularly to the talking-machine art. There is nothing so far stated that is peculiar to the making of sound-records. Indeed, the process above set forth is not a *photographic* or *sound-record* process; it is merely a *casting* process or *molding* process.

The same process, as thus broadly stated, namely, the introduction of molten material into a suitable mold, has been employed for many years—I believe since the early 90's at least—in making blank cylinders for use upon talking-machines. That is, a cylindrical mold having a *smooth bore* is employed; and a suitable composition is melted and introduced into the mold. After the material has cooled and set, the casting is removed, just as any other casting would be, and it will then have a smooth cylindrical surface corresponding to the smooth cylindrical bore in which it was cast.

In defendant's process, in the process of the Joyce patent, and in the process of the Miller & Aylsworth patent, a cylindrical mold is employed, but its bore (instead of being perfectly smooth) has minute irregularities, being the reverse of the record-groove of an original sound-record. When the molten material has been cast into such a mold, and after becoming set has been removed therefrom,—the cyl-

indirect casting obtained will present (instead of a uniform surface) one having a helical record-groove—the reverse of the surface of its mold—just as any other casting would present the reverse of the surface upon which it has been cast.

10 Still speaking broadly, the gist of Claims 3, 4 and 6 of the Joyce patent consists in introducing the molten material into a *hot* mold, the mold being heated “preferably to near the temperature of melted wax” (Line 108 of page 1 of Joyce patent).

Claims 3, 4 and 5 of the Miller & Aylsworth patent require that the molten material *must* be introduced into a *cold* mold, provision being carefully made to keep the mold from becoming heated.

20 These two “processes,” then, are diametrically the opposite each other. Joyce requires a *hot* mold, while Miller & Aylsworth require a *cold* mold; and it is inconceivable to me how any one could in the same procedure be carrying out simultaneously these two patented processes. As a matter of fact, defendant’s process introduces the molten material into a *cold* mold (instead of into a hot mold as required by Joyce); and defendant’s process consists emphatically in subsequently raising the temperature of the mold until it becomes heated far above the temperature of melted wax, and in *maintaining* this high temperature for a considerable length of time, instead of introducing the wax into the cold mold of Miller & Aylsworth and preventing the mold from becoming heated.

30 In short, considering the process of the Joyce patent and of the Miller & Aylsworth patent in the broadest possible light, it is evident that defendant’s process is entirely different from each of the two patented processes.

40 Q. 5. What do you find to be the alleged novelty in the process set out in Claims 3, 4 and 6 of the

Joyce patent, being the Claims here in suit?

A. On reading this Joyce patent it would appear that the patentee when he presented his application to the Patent Office had no idea of the difficulties to be encountered in the production of cast or molded sound-records; and I think it quite probable that he was not at all familiar with the material or composition employed in making sound-records, either cast or original. Certainly his specification gives no intimation as to any difficulty or difficulties to be encountered in making cast cylinder records, or as to any precautions to be taken in avoiding or overcoming these difficulties. Joyce’s Specification directs us to take a mold and do two things to it before we introduce the molten material, and he recommends that a third step be performed after the material has been introduced. He tells us first to oil the mold slightly; and then, second, to heat the mold. What effect the heating of the mold will have upon the oil, or what effect the heated oil will have upon the cast sound-record, is problematical.

I will observe here that this step of oiling the mold beforehand was especially emphasized in the prosecution of the Joyce application in the Patent Office, by reason of the fact that the reference to the oil was inserted by interlineation after the Specification was written out. This indicates that the matter was brought particularly to the attention of the applicant and his attorney, and the insertion deliberately made.

His Specification says that the mold and its adjacent parts are slightly oiled “and then heated, preferably, to near the temperature of melted wax” (Bottom of second column). No reason or explanation is assigned for this,—unless it be found in the statements that follow immediately after, “This heating expands mold T slightly,” etc.

Considering not only what is stated in the patent, but also what is *not* stated in the patent, the only reason that can be attributed to the patentee, in directing us to heat the mold, following this by the statement that heating expands the mold slightly, is that Mr. Joyce must have supposed that if his mold be slightly expanded beyond its normal dimensions *before* the material is introduced, then, upon cooling, the mold will contract, and apply uniform pressure, squeezing or compressing the contents forcibly so as to make a perfect casting. Such ideas upon Mr. Joyce's part would seem plausible enough to one who was not practically familiar with the art, and is a consistent explanation of why he directs the heating of his mold.

I said that I came to this conclusion not only from what is stated in the patent but from what the patent *omits* to state. By the last clause, I refer to the fact that the patent gives no directions for heating the material to a temperature substantially above its melting-point, and there are no suggestions that this high temperature must be maintained for a considerable time. The patent does not even intimate that these two steps (superheating and maintaining the superheat) would be desirable; and no provisions are recommended that would produce either of those results. On the contrary, the teaching of the patent is that the wax must *not* be superheated. I understand that in the development of the molded sound-record in a practical manner, the presence of air bubbles, entrapped between the matrix-surfaces and the molten material, caused a great deal of difficulty; and that this obstacle has been removed by defendant, by superheating the wax and maintaining the high temperature, by which the air bubbles are driven off. I understand that complainants, in its practice of the art of molding sound-records, uses molds that are

open at the bottom, and introduces the material in a gentle, quiet manner from the bottom upward, so as thus to avoid air bubbles. Since Joyce says nothing about any air bubbles or any similar defect, and since he does not tell us to introduce the material from the bottom, or to superheat the material and maintain the high temperature; and since he *does* say that this heating "expands mold H slightly"—the only rational and consistent explanation is that Mr. Joyce intended to expand his mold first so that upon cooling it would contract and squeeze its contents. Otherwise, why should he feel called on to mention the perfectly obvious fact that heating a metal mold *expands it slightly*?

From what has been said, it follows that the Joyce patent directs us to heat the mold *before* the molten material is introduced. And this is borne out by the fact that the sentence immediately following begins with the conjunction "then," which is a temporal conjunction, thus:

"The mold etc. are slightly oiled and then, (as a second step) heated * * * Then (as a third step) melted wax is poured * * * After the wax has been poured * * * it will generally have the exact form of the mold when cool."

"Then," after the mold has been heated, the melted wax is poured into it, and "after this wax has been poured it will generally have the exact form of"—what? Why, "of the mold when cool." This, to my mind, reinforces the proposition that Joyce's idea is: "I must first expand my mold by heating it; so that I can then, subsequently, pour in my wax; and then permit or cause the mold to contract (by cooling it) so as to give my casting the exact form of the mold when cool."

When I came to consider the Claims here in suit,

namely, Claims 3, 4 and 6, I find the first step recited in each is said to consist of casting the molten material into "a hot * * * record-mold." I agree with complainant's expert, Mr. Holden, where he says (x-Q. 6) that this step of "casting" begins with the introduction of the first of the molten material into the mold, and ends as soon as the last portion of the molten material has been introduced. I also agree with Mr. Holden where he says (x-Q. 9) that the kind of mold which these Claims of the Joyce patent direct us to fill with the molten material is a hot mold, and with his statement in the second paragraph of his answer to Q. 4, that in the Joyce process the mold is pre-heated.

To sum up: what I find set forth in the Claims 3, 4 and 6 of the Joyce patent as purporting to be novel consists of pre-heating the mold before the molten material is introduced into it. This I understand to be the gist of the alleged invention set forth by these three Claims.

If we ignore the explicit statements of these Claims and of the Specification already referred to, and if we read into the Joyce patent the information contained in other patents that were applied for by other inventors, and disclosed to the world by other patents subsequent to Joyce's filing date, then it might possibly be contended that the gist of the three Joyce claims in suit consists of using a hot mold, whether the same was heated before or after filling it with the wax. But there is no justification for this view. There is nothing in the Claims themselves to warrant it.

Q. 6. What have you to say as to the novelty of employing a hot mold in casting cylinder records or other cylindrical objects composed of a wax-like material? And as to subsequent chilling?

A. I produce a book entitled "The Scientific

American Cyclopedia of Receipts, Notes and Queries. Edited by Albert A. Hopkins. New York: Munns & Co., Publishers, 1893." On page 63, title "Candles," I find under the heading "Cecrophane Candles" the following:

"Melt over a water bath 50 parts of stearic acid and 5 to 8½ parts of bleached beeswax * * * Pour the mass into molds, which have been heated to the same temperature, but avoid stirring." (Italics mine).

Another book, entitled "Chemical Technology or Chemistry in Its Applications to Arts and Manufactures." Edited by Groves & Thorp,—the same purporting to be "Vol. II. Lighting," etc., and purporting to be published in Philadelphia in 1895 by P. Blackiston, Son & Co., contains on page 79 reference to Hinn's Machine for making candles. This Machine is attributed to the year 1801, and the leading idea of it is said to be "the alternate application of heat and cold (in the form of steam and water respectively) to the molds * * * Groves & Thorp contains on the same page 79, as "Figure 38," a cut of this Machine. The article goes on to speak of the alternate proceedings:

"according as to whether the molds were to be heated for the reception of the material or cooled after being charged with it." (Italics mine).

The same Groves and Thorp publication, on pages 80 and 81, refers to "Palmer's First Machine" and "Trucks Machines." The latter is illustrated in Figures 40 and 41 (on page 82 of the Volume) "in which he employed steam and cold water for varying the temperature of the molds."

A third volume is entitled "Soaps and Candles. Edited by James Cameron," etc. It purports to be

the second edition, published in London by J. A. Churchill in 1896. On pages 266-267-268 of this volume, I find descriptions of molding stearine, sperm, paraffin, and composite candles, respectively. The paragraphs referred to note that as a general rule the mold should be heated to about the temperature of the solidifying point of the material used; that with some compositions the mold should be slightly
10 hotter than this temperature, and with others slightly below this temperature.

I likewise produce British patent No. 454 of 1886 to Field & Hamfrey for "Improvements in the manufacture of Paraffine Candles." On page 3 of this patent I find the following:

"DESCRIPTION OF THE PROCESS.

"We take paraffine and melt it, and at a temperature of about 140° Fahrenheit run it into candle molds heated to the same temperature, or rather higher. The pipes thus filled are allowed to stand a few minutes, to permit the air-bubbles to escape and rise to the surface, and are then plunged into cold water. This sudden cooling of the paraffine prevents its forming itself into crystals, and we thus obtain candles nearly transparent, and which will draw freely from the pipes.
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"For paraffines of good quality a wick of ordinary plaited cotton can be used, and by dipping the cotton wick into a weak solution of boracic acid (say four or eight grains of boracic acid to an ounce of distilled water), the ash of the cotton wick will be fluxed, and the candles burn with a bright and clear end. We are aware that the process of filling the molds hot and dipping them suddenly into cold water has been applied to the manufacture of other descriptions of candles, such as candles made of pressed lard; we therefore claim only the application of the process herein-before described
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to the manufacture of candles made entirely or partly of paraffine."

I likewise produce U. S. patent No. 86,659, granted Jan. 19, 1869, to Cowles, for an Improved Machine for Making Candles. This patentee directs the heating of the mold before the molten material is introduced and the subsequent chilling of the molds by cold water. Near the bottom of the second column of page 2 I find:
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"Steam or hot water is then let into the trough *b*, through the perforations along the sides of the pipe *c*, and when the molds are sufficiently warmed, the melted stuff is poured into the receptacle *e*, from whence it runs into and fills the molds. Cold water is then introduced, by the pipe *d*, * * * * (Italics mine.)

And in the next column of the Cowles patent I find this statement of the general knowledge in 1869:
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"I am aware that it is not new to enclose the molding-pipes or tubes within a tight chamber upon a frame, so that, at pleasure, water can be admitted to chill the tubes, or steam to heat them, * * *"

U. S. patent No. 182,547, granted Sept. 26, 1876, to Bingham, for Improvement in Apparatus for Casting Composition Rollers for Printers, in the first column of page 2, refers to the desirability of heating the cylindrical molds by steam, "before the pouring operation;" and in the next paragraph directs the introduction of a current of cold water so as to chill the contents of the molds.
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U. S. patent No. 419,914, granted Jan. 21, 1890, to Bingham, for Apparatus for Making Printers' Rollers, illustrates and describes an apparatus in
40

which steam is admitted around the cylindrical mold for heating it before the molten composition is introduced, and for introducing water after the material has been introduced in order to cool and set the composition.

U. S. patent No. 545,956, granted Aug. 27, 1895, to Fournier, for Apparatus for Molding Candles, shows and describes a plurality of cylindrical molds having means for admitting hot and cold water around the exterior of the molds. In lines 7887 of page 1 thereof I find the following:

"The molds 16 are arranged in groups in boxes or tanks 17, the said boxes being arranged to alternately receive hot and cold water, the hot water surrounding the molds before the operation of molding, after which the hot water is discharged and cold water is admitted to surround the molds to hasten the cooling and setting of the candles * * *

(Italics mine.)

From the foregoing references it will be seen that it was a common expedient in molding cylindrical articles of wax or wax-like composition to heat the mold (either before or after introducing the molten material) and subsequently to apply cold water in order to hasten the chilling.

I have also pointed out that, broadly stated, the process set forth in the Joyce patent is a casting process and not a phonographic process. I mean by this, that to constitute a process "a phonographic process" the process should be directed to overcoming certain difficulties peculiar to the phonographic art. But since the Joyce Specification does not do this, his process cannot be regarded as a process peculiar to the phonographic art. Therefore, in my opinion, at the date of the application for the Joyce patent in suit, in the casting of cylindrical sound-records, there was nothing novel whatever in the

mere idea of employing a hot mold (whether that mold be heated before or subsequent to filling); and there was likewise nothing novel in subsequently applying cold water in order to hasten the chilling.

Q. 7. Do you find among the prior patents classified in the talking-machine art any disclosures of the use of a hot cylindrical mold for producing duplicate cylindrical sound-records?

A. In answering the last question I might have included a number of other patents which have been brought to my attention, among others, U. S. patent No. 303,970, granted Aug. 26, 1884, to Appelt, for Apparatus for Coating Drawing-Rollers. This is another illustration of the use of a cylindrical mold for casting, by melting the material and pouring it into the mold. The mold is brought to a high temperature by a hot water bath, which Appelt points out "will prevent this compound from becoming chilled while rising gradually in the tube" and subsequently the mold with its molten contents is allowed to remain a short time in the hot water, after which they are placed into a cold water bath, which shrinks the casting and permits it to be easily drawn out of the cylindrical tube.

Now, answering Q. 7, I call attention to the U. S. patent No. 528,273, granted Oct. 30, 1894, to Loreot, and to British patent No. 1,475 of 1894, to Young Loreot is dealing with cylindrical sound-records, and among other things names in the second column of page 2 what he calls a "galvano-plastic mold,"—this is, a cylindrical mold formed by electro-deposition upon the original cylindrical sound-record, the mold having within its bore the reverse of the irregularities on the surface of the original sound-record. He employs this mold for producing duplicate sound-records of *colloid*, by the combined use of heat and pressure. He uses a hot mold,

against the surface of which the celluloid is forced by pressure. I am aware of the fact that this Loret process is not a "casting process," since he was not dealing with *melted* material that could be poured into the mold, as in case of Joyce. But, as soon as one undertook to use a waxlike fusible composition in place of celluloid, he could avail himself of the expedients already well-known in casting with fusible wax-like materials, including the preheating of the mold and the subsequent application of cold water. And this subsequent application of cold water is expressly set out in the same passage in the Loret patent.

The Young British patent discloses the use of an ordinary cylindrical mold, such as hitherto described, formed by electro-deposition upon the ordinary cylindrical sound-record. Young uses his mold in the same way as above set forth for Loret; that is, he preheats it, places within it a very thin shell of celluloid which is softened by the heat already imparted to the mold, and applies pressure. It is true that Young, using a very thin shell of celluloid, withdraws his duplicate sound-record from the cylindrical mold by "collapsing" it. But, as I suggested in connection with the Loret patent, as soon as one undertook to employ a wax-like fusible composition in place of the thin shell of celluloid, he could avail himself of the expedients already pointed out as well known in casting with such fusible materials, including the pre-heating of the mold and the subsequent application of cold water (both directed by Young); and, from the very nature of the material used, upon cooling it would shrink away from the mold sufficiently to be withdrawn without collapsing it. In support of this last statement I quote from Judge Platt's decision upon an Edison patent, when speaking of the fact that Young was using a thin strip of celluloid,—as follows:

"By using a material then well-known in the art, with a higher coefficient of expansion and contraction, it would seem that the necessity for collapsing would have been obviated."
National Phonograph Co. vs. American Graphophone Co., 135 Fed. Rep., 811.

Q. S. Please consider specifically Joyce's claims here in suit, and state what you find novel therein?

A. Claim 3 of the Joyce patent assumes the presence of what is called "a hot, seamless, tubular record-mold,"—which is in effect an ordinary cylindrical mold having within its bore the recesses of the record-groove of an ordinary sound-record. The Claim further assumes the presence and availability of the molten material, which is spoken of as "fused wax-like material at substantially the same temperature as the mold." The *temperature of the mold* is preferably only about the melting-point of the wax (see lines 102-3 of p. 1). The presence of these two articles (the *hot* mold, and the molten material) forms no part of the "process." These two articles may be regarded as the tools or implements with which the process is to be carried out.

Having these two implements available, the Claim recites three steps as constituting the process:

- (1) Pouring the molten material into the mold;
- (2) Cooling the mold and contents * * * and
- (3) Removing the hardened casting longitudinally from the mold.

There is absolutely no step directed by this Claim that is not taken in every casting operation. It should be noticed that the Claim does not direct us to *heat* the mold,—the heating of the mold *forms* no

part of the process set forth by the Claim. But, if we assume that the heating of the mold is implied in the Claim because the Claim directs us to pour the material into a hot mold, then, in the first place, defendant introduces its molten material into a cold mold. And, in the second place, the heating of the mold is a well-known expedient in casting cylindrical objects.

10 So far as removing the hardened casting "longitudinally" from the mold, this is the natural and obvious manner of getting any cylindrical casting out of its mold. I refer to Judge PLATT'S Opinion already referred to, rendered in *National Photograph Company vs. American Graphophone Company*, reported in 125 Fed. Rep., p. 809, on p. 810. His Honor was referring to certain Edison patents for molding cylindrical sound-records, and ob-

20 serves: "In using molds, when the article to be produced was spherical, it is evident that the mold must be divided; but when the article is not spherical, and if the molten material is of such a character that upon cooling it contracts, then, a continuous mold can be used. It will be conceded, I think, that casting wax-like materials in continuous molds to obtain blanks, which, after shrinking, could be withdrawn lengthwise, was not a very difficult matter, and was thoroughly developed long before either patent is suit." (Italics mine.)

30 To sum up with regard to Claim 3, the first step of pouring or casting, the molten material within a hot mold was a common expedient. The next step, the cooling of the mold and its contents, is and was the common expedient resorted to as the second step in the casting art. And the final step, of removing the casting lengthwise from the cylindrical mold, is obviously a common method of getting such casting out of its mold. In whatever light we view the

Claim," I can find nothing novel in it.

Claim 4 is the same in substance as Claim 3, differing therefrom solely in reciting that he first allows the material to set and then cools it. As the method of cooling described by the patent consists in the application of cold water, I take this passage to mean that the Claim directs us not to plunge the mold and its molten contents into water as soon as the mold has been filled, but to allow the liquid contents to cool in the air until the wax has become solid, and thereafter to apply the cold water treatment. With regard to this Claim, in my opinion, it does not differ in substance from the process disclosed in Claim 3, and contains no novel step. In the second place, if we emphasize the fact that the Claim directs us to delay the application of the cold water until after the wax has become solid, clearly defendant does not practice this process, because defendant plunges its mold containing the molten wax immediately into the cold water bath, while the wax is still not only molten but at an abnormally high temperature, far above its melting point.

Claim 6 is in substance identical with Claim 3. It presupposes the presence and availability of the same two implements, namely: (1) the hot mold; and (2) the melted wax,—which, of course form no part of the process, but are merely the implements with which the process is to be carried out. Claim 6 recites the same three steps recited by Claim 3, namely: first, pour the melted wax into the hot mold; second, cool the contents,—specifically by placing the mold in a water bath; and, third, take the hardened casting lengthwise out of the mold. This Claim also is utterly wanting in novelty. Each step called for is old, and the succession of steps is old. In casting any cylindrical object we must have the material in a molten condition, and the references cited in a previous answer show that

it was old to have the mold also in a heated condition. We would then, in any casting process, pour the melted material into the mold; we would then cool the mold and its contents; and we would finally withdraw the casting from the mold, and if the shape be cylindrical we would withdraw it in a direct longitudinal manner, what Judge PLATT calls "lengthwise."

10 Q. D. You have said that in your opinion the alleged novelty of the Claims of the Joyce patent here sued on consists in heating the mold *before* the melted wax is poured in,—that is, in *pre-heating* the mold. Do you find any statements in the file-wrapper and contents of the Joyce application which eventuated in the Joyce patent No. 831,668 in suit, that bears out your conclusions?

A. I certainly do. The file-wrapper is very voluminous. The application was filed Oct. 13, 1897; and was not allowed until July 6, 1906, nearly nine years, and the patent did not issue until some months after that. Without searching through this entire mass, I note that Claims 3, 4, 5 and 6 having been rejected by the Patent Office on Jan. 6, 1906, in view of certain patents of Edison, Mr. Frank L. Dyer, the attorney for the applicant, on March 10, 1906, presented an argument, saying, among other things:

30 "Each of these Claims specifies * * * the use of a *hot* mold. This feature of the process * * * prevents the wax from *instantly congealing* upon coming in contact with the surface of the mold * * * " (Last italics mine).

In reply to this, on April 10, 1906, the Patent Office cited the English patent of Young, saying this patent

40 "discloses a *previously heated* mold * * * "

In reply to this rejection of the Claims here in suit, on June 14, 1906, Mr. Dyer made an argument in the course of which he said:

"There is much more likelihood of entrapping air in a casting operation, and in order to prevent this the mold is heated to the melting-point of the wax *before the molten wax is introduced* * * * " (Italics mine).

10 As the result of these arguments—viz: that the invention is limited to *pre-heating* the mold in a casting process—the Claims, which had been rejected upon prior patents, were allowed. It appears, therefore, that the consideration for allowing the Claims here sued on was that the applicant and the Patent Office limited the Claims not only to the casting process, but also to the *pre-heating* of the mold (*before* the wax is poured in).

20 Q. 10. What do you understand is the process set forth in Claims 3, 4 and 5 of the Miller & Aylsworth process patent No. 688,615, here in suit?

A. This patent purports to be for a method of duplicating phonographic records, and it presupposes a suitable matrix or mold, and a tank or other vessel containing suitable wax-like record-material in a molten condition. Of course, the mold, the tank, and the melted wax form no part of the process. The process of this patent can scarcely be better described than in the language of the companion Aylsworth & Miller Apparatus patent No. 688,676, also sued on, as follows: "The process (Italics mine)

30 "consists in immersing in a bath of molten wax-like congealable material a matrix or mold which carries on its bore the representation in negative or relief of the record to be duplicated,"—

that is to say, the mold is plunged beneath the surface of the molten wax; yet this mold is not immersed haphazard, it must be immersed in a particular manner—

"whereby the molten material will fill the bore of the matrix or mold, but will be excluded from its exterior"—

- 10 which last is an important feature of the invention. And this is not all, the process must be carried out in such a manner as that

"the reduced temperature of the matrix or mold relative to the molten material" will cause

"the latter to congregate or chill upon the bore of the matrix until a layer of the desired thickness has been secured,"—

- 20 and right here comes in another essential feature of the process, namely: that after this layer has been secured the mold must no longer be permitted to remain immersed in the bath,—

"after which the material or mold is removed from the bath of molten material and the bore of the duplicate finished by a reaming-tool, the resulting duplicate being thence removed from the matrix or mold by shrinking";—

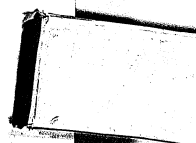
- 30 The chief principle underlying this Miller & Aylsworth process is that a cold metallic surface brought into contact with melted wax will chill the wax; and if the melted wax be at a temperature only about twenty to forty degrees above its melting point (see Lines 22-3 of page 2 of the patent), then the cold metal surface will chill the wax sufficiently to solidify it. Yet this is not all: two precautions must be taken in order not to defeat the purpose of the process. The mold must not be permitted to remain in contact with a mass or large quantity

of the molten wax, lest the metal itself should be heated to the temperature of the melted wax, which would result in re-melting the congealed deposit already produced; and, besides, the mass of hot liquid wax must be kept out of contact with the outer side of the metal mold, lest the metal be heated and thereby in turn re-melt the congealed deposit. The patentees provide a casing or shell that surrounds the mold to keep the hot wax from contact with it, and a collar or cap at the top to prevent the material from overflowing the top of the mold (Line 16 of page 2 of the patent).

In short, the purpose of the first portion of the process is to secure upon the bore of the mold a congealed deposit of the wax; and this deposit can be secured only by (1) employing a cold mold; (2) protecting the exterior of the mold from contact with the hot wax—i. e., keeping the mold cool; and (3) removing the mold (with its congealed— 20 solid—deposit) from the vat before the mold becomes heated to the temperature of the molten wax. In addition to these three essentials, I understand that in producing molded sound-records by this Miller & Aylsworth process there is still another indispensable condition, namely: (4) the melted wax must be introduced from the bottom of the mold, and it must be introduced in a gentle, quiet manner so as not to stir up the liquid and cause air bubbles, or produce an uneven deposit (striations); and (5) the temperature of the wax must not be much above its melting point.

Turning now to Claim 3, I observe that this Claim calls for two implements for carrying out the process, first, the mold; and, second, the mass of melted wax (in a tank or vat). The steps called for by the Claim are three, viz:

First, immersing the mold in the molded wax, in a particular manner;



Second, finishing the bore of the "duplicate" so secured; and
Third, separating the duplicate from the mold.

The particular manner in which the mold is to be immersed, as already indicated, consists of *first* lowering it gently and gradually so that the melted wax will rise within the mold from the *bottom*, in a quiet, placid manner; *second*, in simultaneously protecting the outside of the mold from being heated by the wax, and in preventing the wax from overflowing the top of the mold; and, *third*, in removing the mold with its solid wax deposit *before the mold has become heated to the temperature of the melted wax*. If any of these three things be omitted, we do not get the solidified casting, and we do not carry out the process of the patent.

In short, Claim 3 requires, as an essential, that a cold mold with its *bottom open* must be *quietly* lowered into the wax *only slightly* (20° to 40°) above its melting-point, and the mold must be removed *before it becomes heated*.

Another essential of Claim 3 is that the bore of the duplicate must be "*finished*" before the duplicate is removed from the matrix. "*Finishing*" is described in the Specification as *trimming off* the upper end of the duplicate flush with the surface of the mold, and in *reunning out* the bore with a suitable tool so as to produce concentric ribs.

Claims 4 and 5 are the same in substance as Claim 3. Claim 4 is identical in language with Claim 3, except that the last clause of Claim 3 says "and in separating the duplicate or matrix from the mold"; whereas Claim 4 uses the word "*shrinking*" instead of "*separating*." Claim 5 is identical in language with Claim 3, except that Claim 5 directs us to "*finish*" the bore of the dup-

licate "before the latter has become hard." I take this to mean that the physical operation of cutting or reunning out the bore of the deposit so as to produce the ribs must be performed while the material is still in what may be called a semi-plastic condition, and before it has resumed its normal hardness.

Q. 11. Do I understand you to say that Claims 3, 4 and 5 of the Miller & Aylsworth Process patent here in suit require that a *cold* mold must be immersed, and that precautions must be taken to prevent the mold from becoming heated?

A. That is absolutely correct. For instance, on page 1 of the Miller & Aylsworth Specification, *circa* line 40, the patentees say they make duplicates by a process of immersing the mold into the melted material, "whereby a coating or covering of such material will be deposited upon the interior of the matrix or mold by reason of the *lower temperature* of the matrix or mold" (Italics mine). Again, on page 2, *circa* line 20, they say the mold is kept immersed in the melted wax for the time required "to secure a deposit of the wax-like material of the required thickness" (Italics mine). They go on to say when a mold about a quarter of an inch thick is left in the wax at a temperature of about twenty to forty degrees above its melting-point, within three minutes a deposit of the desired thickness will have formed; that is, there will be present, deposited around the bore, a solidified mass of wax.

The patentees continue with the precaution that "*in no instance*" should the mold remain immersed "for a long enough time to allow its temperature to be raised sufficiently to permit the deposited molten material thereon to become remelted" (*circa* line 35 of page 2). Of course the use of the adjective "*molten*" just quoted is erroneous, because

if "molten" it could not become "re-melted." The patent continues:

"The reduced temperature of the matrix or mold relative to the temperature of the molten material causes the latter to become *coagulated* or chilled on the interior of the matrix, and to deposit thereon to the thickness desired" (italics mine).

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This passage also can only mean that the mold must be *cold*, and must not be reheated lest the solidified deposit "become re-melted."

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Again, at line 50, the patentees refer to conditions where the composition would not normally become solidified on contact with an ordinary mold; in which case, the patent directs that the mold be made of increased thickness "or be *artificially cooled* before the dipping operation"—thus emphasizing the fact that the mold must be *cold* in the first instance and must be kept from heating.

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Referring again to the "Claims in suit, all three of them direct us to immerse the mold into the melted wax—yet not in a haphazard way, but *only* in a particular manner "whereby" the specified result will follow, namely: the securing (upon the bore of the mold) of a solidified deposit of the wax.

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The language of the Claims is "whereby the material will *coagulate* . . . and *chill* . . . " on the bore; and it must "coagulate" and "chill" on the bore "in a layer of the desired thickness."

In order that the act of "immersing" can be performed in a manner "whereby" these results can be produced, the mold that is immersed must be *cold*. And in order that this deposited layer may be of the "desired thickness" (such a thickness as to permit subsequent reaming out), the mold must not be permitted to become materially heated, and

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the "molten wax" must not be much above its melting-point.

In short, the nature of the process, the language of the Specification, and the language of the Claims in suit—*all* require that the mold must be *cold*; that the wax must not be heated much above its melting-point; that the mold must not be allowed to reach the temperature of melted wax; and that the mold must be removed from the vat before the solidified deposit can be re-melted.

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Q. 12. Please compare the process set forth by Claims 2, 4 and 5 of the Miller & Aylsworth process patent here in suit with the process set forth in Edison patent No. 607,002, granted Feb. 5, 1901, upon an application filed May 8, 1900—and particularly with reference to the process disclosed in Claims 2, 4 and 5 of the said Edison patent.

A. The Edison patent and the patent in suit describe the employment of a "continuous" mold (that is, a unitary or seamless mold, as distinguished from a mold made up of several parts). The wax-like sound-record material is melted and introduced into this mold, and is then allowed to cool and set—and artificial cooling may also be employed, as by the application of cold water or of an air-blast.

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The Edison patent discloses the cylindrical mold as having an open bottom, and mounted above a tank containing the melted "wax," and provided with a piston-plunger (having a cone), which serves to draw the melted wax upward into the mold. Edison says the temperature of the mold is "relatively cold" (line 83 of page 2); and the melted wax being brought into contact with the cold surface of the bore of the mold will immediately be reduced in temperature and solidity (Edison, p. 2, col. 2).

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At the top of the second column of page 2, the Edison patent says:

"The liquid molten material entering the mold 9 will engage all portions of the record formed on the bore thereof, and the *materially lower temperature* of the mold will result in the almost instantaneous chilling of the surface of the molten material therein" (italics mine).

The patentee then recommends the use of cold water or a blast of cold air for chilling the surface of the molten material; and says that this chilling "results in the *setting* of the positive impression thus secured"; and that as soon as the material has been chilled throughout its entire thickness (line 90 of page 2) the mold with its contents are removed from above the tank and "allowed to cool by exposure to a cold atmosphere or by an air-blast until the solidified material has contracted away from the bore of the mold, so as to permit it to be removed therefrom by forcing the plunger downward."

The passages just cited show in the first place a two-step cooling process; and in the second place, that the casting is *disengaged* from the bore of the mold by reason of its shrinkage due to the cooling, and is *removed* from the mold by a direct longitudinal movement.

The gist of this Edison process I understand to be the use of a *cold* mold with a melted material, the introduction of the melted material into contact with the cold bore of the mold (whereby the material is solidified so as to produce a deposit, and is allowing or causing the material to set (so as to become a hardened casting), and the withdrawal of the casting from the bore. Not only is the mold cold to begin with, but there is nothing to raise its temperature except the slight amount of molten

material brought in contact with it, the air circulating around the outside of the mold will tend to counteract any rise of temperature imparted to the mold.

Claims 2 and 4 of the Edison patent inquired of clearly and concisely describe this process. These two Claims are the same in substance. The first step in each Claim is said to consist in securing the mold. Having the mold and the melted wax, the succeeding steps may be formulated as follows:

(1) Introducing the melted wax into the mold;

(2) Allowing the molten wax to set (become solidified);

(3) Contracting the set material (which I understand to mean, "applying cold water or cold air to the already solid, but still *seems* casting"), in order to cause the same to shrink away from the mold so as to leave an annular space separating the casting from the mold; and

(4) Removing the casting, or duplicates sound-record, from the mold by a direct longitudinal movement.

Comparing the process claimed by Claims 2 and 4 of the Edison patent No. 667,662, with Claims 3, 4 and 5 of the Miller & Aylsworth process patent here in suit, and noting that the Miller & Aylsworth process requires that we must have a continuous or unitary mold (as in the Edison patent), and that this mold must be *cold* as described in the Edison patent, I find that the process called for by Claim 3 differs from the process of the Edison patent in the following respects:

(1) Where Edison merely says he introduces the melted wax into the mold, Miller & Aylsworth introduce it by "immersing" the mold in the particular manner already pointed out. If "immer-

10 sion," as used in Miller & Aylsworth's Claim, means merely the submerging of the mold in order to fill it; there would be no difference between this proceeding and the corresponding step that Edison employs. In order to bring to light the difference, in this respect, between the two processes, we must bear in mind that Miller & Aylsworth immerse their mold in the *particular* manner "whereby" the specified results are to be obtained;

(2) The second step in the Edison patented process is the "allowing the molten material to set," which is done with the mold in the open air; whereas the corresponding step in the Miller & Aylsworth Claim (the solidifying of the material upon the bore of the mold, in a layer of the desired thickness) is brought about while the mold is *submerged*;

(3) As the third step the process of the two Edison Claims calls for the additional cooling of the casting, so as to shrink it away from the mold; whereas Miller & Aylsworth undertake to "finish" the bore of the casting before they shrink it away from the mold;

(4) Each patented process removes the cast duplicates from the matrix in the same manner.

10 In short, I find the process claimed by the three Claims of the Miller & Aylsworth patent in suit to be broadly the same as the process claimed by Claims 2 and 4 of the said Edison patent No. 667,602; but that the Miller & Aylsworth process differs specifically from the patented Edison process in (1) obtaining the *solidified* casting *while the mold is submerged*, and (2) in finishing the duplicate before it is removed from the mold.

10 Claim 5 of the said Edison patent is the same in substance as Claims 2 and 4 already considered, except that it specifies that a core is employed in the center of the mold, around which core the molten material is introduced,—which causes the

casting to be hollow. This is another respect in which the process of Miller & Aylsworth departs from the process of the Edison patent, namely, in dispensing with the central core.

Q. 13. Please compare defendant's process with Claims 3, 4 and 5 of the Miller & Aylsworth patent in suit?

A. Defendant's mold is provided with a core, and in this respect is like the mold of the Edison patent No. 667,602 (just referred to), and is unlike the mold of Miller & Aylsworth. Defendant's mold is filled with the melted wax from the top, as distinguished from filling from the bottom, as in Edison and Miller & Aylsworth. Defendant's melted wax is allowed (or caused) to solidify while the mold is in the air, as in Edison's process—and not while the mold is submerged as in Miller & Aylsworth's process. Defendant's cast duplicate is then chilled by the application of cold water, and subsequently by a cold air-blast, just as in the Edison patent referred to, as distinguished from the Miller & Aylsworth process which first allows the material to set (in the air), and then applies cold water. Defendant's molded duplicate is scraped out while in the mold, but is "finished" after its removal from the mold, as in the Edison patent, as distinguished from finishing the duplicate before removing from the mold (as in the Miller & Aylsworth process).

Thus it is clear that defendant's process is more like the process claimed by Claims 2 and 4 of the Edison patent No. 667,602, than it is like the process of the Miller & Aylsworth patent in suit.

But defendant's process differs very radically from both Edison's and Miller & Aylsworth's in the essential feature that whereas in the two patents the melted wax solidifies immediately upon coming in contact with the cold mold, and whereas in the two

patents the cold mold is not allowed to become heated,—in defendant's process the mold is brought to a temperature of 150° above the melting-point of the wax, and this high temperature of the wax and the mold is *maintained* for an appreciable time.

This distinctive difference between defendant's process on the one hand, and the process broadly com-
 10 ment to the Edison patent and the Miller & Aylsworth patent on the other hand, is clearly stated by Judge PLATT in the decision already referred to. The language applied to the Edison process in that decision is also applicable to the Miller & Aylsworth process. Judge PLATT said:

"Air bubbles in the melted material drove Mr. Edison away from casting for many years, but in this patent he reverts to casting, and avoids air bubbles by introducing the melted wax from the bottom upwardly into a very cold
 20 mold, so as to produce an almost instantaneous chilling of the wax."

And the foregoing epitome of the Edison patent is true of the Miller & Aylsworth patent in suit. Judge PLATT continues:

"Defendant undertakes to get rid of the air bubbles by superheating the melted wax after it has been poured into the mold at the top, and then proceeds to suddenly chill it down from its high temperature. This is done under Letters-patent No. 682,991 and 682,992, Sept. 25, 1901. Mr. Michonniak discovered that he could do this when melting blanks in 1896
 30 * * * and this knowledge led directly to defendant's patents. * * * Mr. Edison [and Miller & Aylsworth] eliminates air bubbles by one process, and the defendant eliminates them by another and distinctively novel process." (Italics mine.)

National Phonograph Co. vs. American Graphophone Co., 135 F. R. 814.

Q. 14. Do you know whether or not the Edison patent No. 667,662, above referred to by you, was involved in the suit before Judge PLATT, from which you have just quoted; and, if so, which Claims thereof?

A. The Edison patent No. 667,662, above referred to, was involved in the case reported in 435 Patent Reporter, and was the patent of which Judge PLATT was speaking in the quotation just given. The complainant declared on Claims 1, 2, 4 and 5 thereof. The Bill of Complaint was dismissed with costs, by a Decree entered March 30, 1905. I believe Mr. Murray, in his deposition, has already set out the fact that this decision has been acquiesced in by the complainant therein.

Q. 15. Have you read the Aylsworth & Miller Apparatus patent No. 683,076, here in suit, and do you understand the same?

A. I have read the said patent, and I believe I understand it.

Q. 16. Will you please indicate, for the convenience of the Court, the concrete features shown and described in the said patent, corresponding to the several elements recited in Claims 6 and 7 of the said Aylsworth & Miller patent?

A. This apparatus is stated in the patent to be for carrying out the process disclosed by the Miller & Aylsworth process patent already considered by me. The two patents were issued on the same date, upon applications filed in the Patent Office on the same date. Speaking broadly, the apparatus comprises a tank or vat containing the melted wax, and having beneath it a gas burner or other source of heat; an open-bottomed cylindrical mold, having a can or shell surrounding it to protect the outside of the mold, and having a collar or "cap" at the top to prevent the material from flowing over at the top; and a handle by means of which the mold and
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Its surrounding parts can be lowered into the tank and drawn up again. The bore of the mold contains a reverse of the original sound-record; and in the bottom of the hollow mold is arranged a reverse name-plate, so that the casting will present any desired lettering. I have said that the mold was "open-bottomed." At the bottom of the mold is a disc having a large hole in its center, so as to provide an annular ledge or seat around the bottom of the mold. The reverse letters or characters (to be imparted to the duplicate) are upon this ledge.

In addition to the foregoing, the patent shows and describes a reaming-device, comprising a revolvable chuck and an adjustable reaming-knife.

I will now refer specifically to Claims 6 and 7. These two Claims are the same in substance. Claim 6 calls for only two positively-recited elements, namely: means for securing the solid casting; and means for finishing the interior of the latter. That is, the first element can be found in Fig. 1 (and in Fig. 1 *only*), and the second element in Fig. 2 (and in Fig. 2 *only*).

Claim 6 specifies the second element as "means for finishing the interior of the duplicate," etc.; where Claim 7 specifies the second element as "means for forming * * * a series of concentric ribs * * *"; but the only means for finishing (Claim 6) is the reaming device of Fig. 2, which is the means for producing the series of ribs called for by Claim 7.

The first element is said to be—

"means for securing a deposit of a wax-like coagulable material upon the bore of the record-matrix." (Italics mine.)

The word "deposit" indicates the "coagulated" or solidified wax—as distinguished from the "mol-

ten" or liquid wax. "Securing" this deposit conveys the same idea; we might get a liquid deposit upon a surface, but it would not be secured, until it had become solid so as to remain. The securing of a "deposit" upon the bore of the matrix, emphasizes the same idea. In short, the "means" constituting the first element of Claims 6 and 7, must be some instrumentality or instrumentalities by which we can obtain the desired casting in the form of a solid deposit, and upon the bore (and not "throughout the entire hollow concavity"); and this "means" must be the instrumentalities "substantially as set forth" in the Specifications and Drawing, viz: the tank (11) having melted wax; the cold mold (1), having an opening (6) in its bottom through which the melted material can rise; together with the shight (8) to keep the mold from becoming heated. The "means" under discussion also requires that this cold mold must not be allowed to remain in the tank (11) until the mold has become heated,—otherwise there would no longer be means for securing the wax in the form of a deposit "upon the bore."

In short, the first element of Claims 6 and 7 consists of the precise apparatus shown in Fig. 1, or a colorable imitation thereof.

The second element of the two Claims, namely, means for "finishing" the interior (Claim 6) or for forming the ribs (Claim 7), is the reaming apparatus of Fig. 2. I note that these two Claims speak of these two elements as comprising a "combination." I understand that the word "combination," in reference to mechanical structures, means that the elements "in combination" co-operate with each other to produce a single or unitary result; that although such elements need not be acting simultaneously, yet there must be a co-operation,

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In the sense that the operation of one element must affect (or be affected by) the operation of the other element. There is no such co-operation or mutual effect existing between the two elements of Claims 6 and 7 of this Aylsworth & Miller patent in suit. To say that there is a "combination" or "co-operation" between the devices of Fig. 1 and the device of Fig. 2, seems to me like speaking of the "combination" or "co-action" between the carpenter's plane, with which a plank is smoothed, and the point-brush with which the plank surface is subsequently covered with paint. The two implements (plane and brush) do contribute to produce the single result, a smooth painted board; but they do not co-act. Neither one modifies (or contributes to) the action of the other.

In like manner, after the "means" constituting the first element of the Claim, as disclosed in Fig. 1, have performed their part of the work, so that we have a solid casting with an irregular bore, this casting could be taken out of its mold and either used just as it is (which would doubtless be rather unsatisfactory) or smoothed out by any finishing implement. In short, the first-named "means" has performed its function and the result accomplished is the same, whether we do or do not employ the second-named "means." And in like manner, the second-named "means" could be employed upon any hollow cylindrical object of wax-like material, whether a blank cylinder or any other object; the operation of the second-named "means"—the reaming apparatus—is not dependent upon, and is not in any manner affected by, the operation of the first-named "means."

Q. 17. What novelty do you find in the apparatus set forth in Claims 6 and 7 of the Aylsworth & Miller patent in suit?

A. As there is no real co-action or combination

between the two elements recited in these Claims, I will consider each of the two elements separately.

The first element of Claims 6 and 7 I find in the Edison patent No. 667,662, already referred to, granted Feb. 5, 1901, upon an application filed May 8, 1900. That patent discloses "means for securing a deposit of a wax-like congealable material upon the bore of a matrix or mold which carries the representation of the record to be duplicated," (as called for by the Miller & Aylsworth Claims 6 and 7), consisting of the following parts found in Edison's Drawing, namely: the tank (1) containing the molten material; the cold cylindrical recess mold (2), open at its bottom, and located above the tank; and the piston-plunger (4-7) for raising into the mold, from the bottom, the melted wax, which is congealed immediately upon coming in contact with the cold matrix-surface (2).

The second element of the Aylsworth & Miller Claims 6 and 7 in suit, the means for reaming, etc., is found in the said Edison patent and elsewhere. It is true that the Edison patent speaks (line 113 of page 2) of reaming the cast duplicates to the proper size, after Edison has spoken of removing the duplicates from the mold. But the reamer could be applied to the duplicates before the latter has been removed from the mold. In fact, any reamer for duplicate sound-recesses could be applied to such duplicates either before or after they are taken from the mold. Therefore, the said Edison patent discloses not only the first-recited element of Claims 6 and 7, but also "means adapted or suitable or capable of use for finishing the interior of the duplicate while the latter is in position within its mold" (Claim 6) or adapted or capable of use "for forming in the duplicate while the latter is in position in the mold a series of concentric ribs," etc. (Claim 7).

Moreover, if there be any "combination" between the two "means" recited in Claims 6 and 7 of Aylsworth & Miller, there is just as such combination existing between the apparatus illustrated in Figs. 1 and 2 of the Edison patent referred to and the reaming apparatus referred to in the second column of page 2 of the said Edison patent No. 607,092.

- 10 I have referred specifically to this Edison patent, not because it is the only one, but because I have it conveniently at hand, and because this patent in particular seems to me to be nearer kin to the Aylsworth & Miller patent in the particular apparatus employed. If Claims 6 and 7 mean the combination of *any* means for getting a cast sound-record and *any* means for reaming out the bore of such casting, then the Claims are anticipated by almost any of the prior patents which disclose the production of cast sound-records, because the ream-
20 ing out of the bore of such castings has been a common practice.

Q. 18. In answering the previous questions, did you take into consideration the fact that Claim 7 specifies that the ribs to be produced are "concentric ribs" and not a continuous spiral rib?

A. I did, but I will point out that in the Edison patent No. 414,761, granted Nov. 12, 1889, reference is made in general terms to—

30 "providing the interior of the cylindrical phonogram-blank, with ribs, flanges, or projections * * * ." (line 20).

And Edison says:

"I prefer to form a spiral rib."

- This is a disclosure of "ribs" in general and "spiral ribs" in particular. The only internal ribs other than spiral that would naturally occur to one are
40 either *longitudinal* ribs or *concentric* ribs. This

same Edison patent likewise refers (near the top of the second column) to *reaming out the interior* of the phonogram-blanks." It is true that the reference does not refer to reaming those blanks out so as to produce ribs, but it shows that the reaming out of phonogram-cylinders was practiced and well known long before the date of the Aylsworth & Miller patent in suit.

U. S. patent No. 185,054, granted Dec. 5, 1876,
10 to Wilder, shows a chuck having a tapering bore in which a frusto-conical hollow article is inserted and revolved in order to ream out its interior face. In Wilder's drawing, A is the chuck and C is the tapering hollow article. The chuck and the article are revolved by the shaft B. Not only is the interior of the article reamed out, but a (concentric) groove is cut near one end thereof. The cutting of a plurality of such grooves, leaving a plurality of
20 "concentric ribs" would be obvious if such concentric ribs were desired.

I will call attention also to Edison patent No. 393,462, granted Nov. 27, 1888, as illustrating the practice of *reaming out the interior* of the cylindrical phonogram-blanks. Edison patent No. 393,463, granted Nov. 27, 1888, illustrates an apparatus for the same purpose, although these two Edison patents do not disclose any concentric ribs (but merely a continuous taper bore). But, since the Edison patent No. 414,761 (above referred to) discloses the production of internal ribs, both *spiral* and of other forms, there would be nothing novel in producing concentric internal ribs by reaming, in view of the Wilder patent of 1876 above referred to.

Although, for producing the *spiral* rib of the Edison patent No. 414,761, Mr. Edison says he prefers to employ a core containing a spiral groove,—where-
40 by the spiral rib is formed by the casting operation,

yet, since he indicates other forms of ribs, which I understand to be either longitudinal or concentric; and since a core containing concentric grooves around which there should be produced (by casting) a phonogram-blank having concentric ribs, could not be removed from the casting—the said Wilson patent No. 414,704, teaches us that we may produce a cast phonogram cylinder, and rear out its bore to obtain concentric ribs.

In fact, without looking for any patent or reference, it is a matter of common knowledge that wood-workers and metal-workers can produce, by means of the ordinary turning-lathe, a series of concentric ribs around the outside of an article. And I think that it has likewise been a matter of common knowledge for years that they could also produce a series of concentric rings or ribs upon the *inside* of tubular articles. There could be nothing novel in reaching out the bore of this particular tubular article (cast sound-record) to produce concentric rings.

Q. 19. Please compare defendant's apparatus with the apparatus set forth in Claims 6 and 7 of the Aylsworth & Miller patent in suit.

A. The apparatus claimed by Aylsworth & Miller consists of the two elements named, viz: the particular instrumentalities shown in Fig. 1 and the apparatus shown in Fig. 2, the two elements being alleged to constitute a "combination." As I have already explained, the first "means" recited in these two Claims could not be considered as *any* instrumentalities for obtaining a cast sound-record, but require the use of a *cold* mold, also the protection from (and the prevention from) raising the temperature of this mold to the melting-point of the wax etc.

Defendant's apparatus comprises an ordinary mold and means for heating this mold far above the temperature of the melted wax, such "means" preventing the formation (or "securing") of a deposit

upon the bore of the mold. In short, defendant's "means" for obtaining its cast sound-record is entirely different from the "means" recited in Claims 6 and 7 of the Aylsworth & Miller patent in suit.

With regard to the second named "means" of these Claims, as I have pointed out, any renner or other device for finishing the interior of the cast cylinder could be employed for that purpose either (after) the casting has been removed from its mold, or before the casting has been removed; consequently, any renning-tool used with a record-cylinder is "means for finishing the interior of the duplicate, while the latter is in position within the matrix or mold." But, I understand from the testimony given herein by Mr. Macchiondi, that in defendant's factory, although the interior of defendant's cast sound-records is "scraped" while the casting is still in position within its mold, yet the *finishing is done subsequently*, after the casting has been removed.

In short, defendant's apparatus is not the alleged "combination" recited in Claims 6 and 7 for two reasons: (1) defendant does not employ the first-named "means" of these Claims, nor (2) does defendant employ the second-named "means."

If defendant's apparatus and the apparatus of the two Claims in suit were substantially the same, they could be operated in substantially the same manner to produce substantially the same results, but this is not the case. The patented apparatus is intended for carrying out the process of the Miller & Aylsworth process patent in suit, by which the solidification or coagulation of the wax is obtained immediately upon wax coming in contact with a cold mold, while the mold is still immersed; and when the mold is withdrawn from the vat, it brings with it the already-formed and solidified

casting. Defendant's apparatus could not produce this result: The defendant's apparatus comprises the tank containing *abnormally hot* wax, and there is no means provided for preventing the metal mold from becoming heated to (and above) the melting point of the wax; consequently defendant's apparatus could not produce a congealing of the wax upon the bore of the mold, and defendant's apparatus could not bring out from the vat an *already solidified* casting. On the other hand, defendant's process could not be premetted by the Aylsworth & Miller patented apparatus: Defendant's process involves the superheating the wax while it is in contact with the mold, which results in the superheating of the mold itself, to a temperature far above the melting point of the wax; and the mold of the patented apparatus could not be thus heated on account of shield S which excludes heat from the exterior of the mold.

Considering that defendant's apparatus and the patented apparatus are both intended for the production of cast sound-records, it is difficult to conceive of two instrumentalities in the same art that are so radically different in essential points.

Q. 20. Please state for the convenience of the Court what are the concrete things recited by Claim 5 of the Aylsworth & Miller patent in suit?

A. Claim 5 differs from Claims 6 and 7 in two respects: First, it does *not* include the renaming or finishing apparatus; and second, it *does* refer to the reverse letters or characters for producing in the casting a suitable designation of the selection.

The positively-recited elements of Claim 5 are three, namely:

1. The record-mold;
2. A disc at its bottom, carrying the reverse designation of the sound-record; and

3. "Means for depositing molten material . . ."

If we should consider this Claim absolutely without any reference to the specification and drawings, so as to understand that the Claim recites the employment of *any* mold, with any closure at its bottom carrying reverse letters or characters (to be imparted to the product), and *any* "means" for filling the mold,—such apparatus would, of course, be absolutely lacking in novelty. The only respect in which such apparatus would differ from any mold at all with a ladle or other means for filling the mold, would be in the employment of the reverse characters to be imprinted in the casting. But this is a very common expedient. I refer, for instance, to U. S. Letters Patent No. 359,837, granted March 22, 1887, to Schuberth for a Soap Press. Schuberth, in lines 91.3 says:

"The die D may be engraved to produce the impression upon the soap of a monogram, trade-mark, or other character."

If, however, we consider Claim 5 in suit in connection with the specification and drawings, then it is clear that the mold and disc referred to must have a large opening in the bottom to permit the melted wax to enter the mold; and in order to "deposit" the wax, the mold and its disc must be cold, means (such as shield S) must be provided to protect the outside of the mold from being heated; and means must also be provided for withdrawing the mold from the vat *before the mold becomes heated*. The use of the word "depositing" in Claim 5, instead of the word "introducing," is significant. It has the same meaning as the phrase "securing a deposit" in Claims 6 and 7; it means the same thing as the expression "to secure a deposit" in line 3 of

page 2 of the specification; and the same as the phrase "to deposit thereon" in line 9 of page 2. Therefore, as already indicated, the positive elements called for by Claim 5 may be stated as follows:

1. A cold mold having a shield or other means for protecting its exterior from heat, and having an opening in its bottom to admit the melted wax;
2. A disc having a large opening in it and seated beneath the mold, and containing reversed letters; and
3. Certain specified "means," comprising a vat containing melted wax, the openings 6 giving access from the bottom upward into the mold, and the *coldness* of the mold, as well as the other means for preventing the mold from becoming heated.

Q. 21. Please compare the apparatus of Claim 5 in suit with the apparatus shown and described in the Edison patent No. 957,662, granted Feb. 5, 1901, and also compare the apparatus in Claim 5 with defendant's apparatus.

A. If Claim 5 be read with *utter* disregard to the specification and drawings, I find precisely the same elements in the said Edison patent—except the use of the reverse letters for imprinting the designation of the sound-record. Thus, the first element of Claim 5 is the mold which is indicated by reference-numeral 9 in the said Edison patent; the disc upon which the mold is said to be "seated" is the disc or piston 4, which, in Edison's Fig. 2, *closes the bottom* of Edison's mold 9; and the Edison patent shows "means for depositing molten material within the matrix or mold" * * * whereby the duplicate record will be formed * * * In short, if Claim 5 be read with *utter* disregard to the Aylsworth & Miller Specification, it could be read literally upon the

said Edison patent, except for the use of the old expedient of reversed letters for imparting a designation to the cast article.

But giving to Claim 5 its proper meaning, then I find the following resemblances:

1. Edison and Aylsworth & Miller have the same cylindrical record-mold, but the Aylsworth & Miller mold carries positive means (specifically shield 8) for protecting the outside of the mold from contact with the wax, while Edison does not. In this respect defendant's mold is like Edison's mold. The Aylsworth & Miller mold is open at its bottom, and so is Edison's, and means are provided to prevent the wax from flowing over the top; while defendant's mold is closed at its bottom and is open at its top and the wax is *caused* to flow over the top. Miller & Aylsworth and also Edison provide means for preventing these molds from becoming heated; whereas defendant provides, and actually uses, means for causing his mold to become *very hot*.

2. As to the second element, the disc carrying the letters, this disc is not intended as a closure, but merely as a convenient location for the letters. The Edison mold is open-ended as is the Aylsworth & Miller, but it does not carry the reverse letters. Defendant's mold has an actual closure at its bottom, in which reverse letters may be placed. This is the only respect in which the defendant's apparatus approaches nearer to the Aylsworth & Miller apparatus than to the Edison apparatus.

3. The third element of Claim 5 is the "means" indicated. This "means" comprises, among other things, the *cold mold* and other features which I need not repeat. These features are found in the Edison patent, viz: means for making use of the underlying principle of the companion Miller & Aylsworth process patent, namely, the principle

that melted wax when applied to a cold surface will become chilled and will solidify. This third element of the Aylsworth & Miller Claim 5 in suit is substantially identical with the corresponding features of the said Edison patent, and is radically different from any "means" employed by defendant for obtaining its solidified casting.

In short, when I compare the apparatus in Claim 5 (either as a whole, or considering the elements separately) with the said Edison apparatus and with defendant's apparatus—a triangular comparison, I find that the Aylsworth & Miller apparatus is substantially like the Edison apparatus, and the two patented apparatuses are radically different from defendant's apparatus. The sole point of similarity that can be observed with respect to defendant's apparatus and Aylsworth & Miller's is the use of the reverse lettering. This, as I have hitherto pointed out, is a common expedient.

Q. 22. Before closing this examination, I will ask you to consider again the principle of the Miller & Aylsworth process and the mode of operation of the Aylsworth & Miller apparatus, in connection with U. S. Letters-patent No. 95,645, granted Oct. 12, 1869, to Brunner, for Casting Hollow Articles?

A. Hitherto, in considering these two patents in suit, I have in the main confined myself to stating what the Claims recited, and to comparing the same with defendant's process and apparatus. The underlying principle of the two patents in suit consists, first, in submerging an open-bottom cold mold into melted material, whereby (1) the material will rise from the bottom upward into the bore of the mold, and (2) the melted material upon coming in contact with the cold mold will instantly chill and become solidified in a layer against the bore of the mold; and, second, in withdrawing the mold from the vat containing the melted material before the

solidified deposit can re-melt, whereby the remaining contents of the mold will run out at the bottom and leave a hollow casting.

I find these same features illustrated and described, and also claimed, in the Brunner patent No. 95,645 of Oct. 12, 1869. Brunner's mold A is of metal and he tells us it is cold. His mold is open at the bottom B. It is lowered into a vessel containing the melted material (which is spoken of as "metal"). He says that the fluid material coming in contact with the cold mold will become chilled to a certain extent, according to the time the mold remains in the melted metal, forming a thin shell. After the mold has been immersed a sufficient length of time, it is drawn out, leaving the material that has not become solidified to run back into the vessel.

Broadly considered, the only difference between Brunner's apparatus and the apparatus of Miller & Aylsworth is that Brunner employs a two-part mold (which is necessary because his castings were of irregular shape), whereas Miller & Aylsworth employ a unitary mold (because their casting is a cylindrical article which can be withdrawn from such a mold). This difference, however, is absolutely immaterial for the reasons already stated, including the extract from Judge PLATT'S opinion found on page 814 of 135 Federal Reporter.

Broadly considered, there is no difference between the process of Brunner and the process of Miller & Aylsworth. The process is the same whether the mold be a unitary continuous mold or a two-part one. The mold is taken cold and the material in molten condition, in each case; the cold mold is immersed into the melted material which rises from the bottom so as to completely fill the mold in each case; the melted material chills and solidifies upon

the bore of the mold to form a layer, in each case; and the mold is withdrawn before the solidified layer can be re-acted, and the un-solidified contents run out of the bottom, in each case.

Defendant's counsel offers in evidence the various publications and patents referred to by the witness Massie during his direct examination, and it is stipulated that the three books referred to were published upon the dates recited in their title pages, that the various patents were issued upon the dates appearing on their various faces, upon applications filed upon the respective dates recited in each patent, subject, of course, to correction for error upon due notice.

It is further stipulated that the books offered in evidence may remain in possession of defendant's counsel, to be produced if called for.

The exhibits are now marked "Defendant's Exhibits," with the following respective designations:

- "Scientific American Cyclopedia of 1893;"
- "Grove & Thorp of 1895;"
- "Soap & Candles of 1899;"
- "British Patent to Field & Humphrey of 1856;"
- "Cowles Patent No. 86,059;"
- "Bingham Patent No. 182,547;"
- "Bingham Patent No. 419,914;"
- "Fournier Patent No. 545,394;"
- "Appelt Patent No. 303,970;"
- "Loret Patent No. 628,273;"
- "Young's British Patent of 1894;"
- "Edison Patent No. 667,662;"
- "Willer Patent No. 188,054;"
- "Edison Patent No. 414,751;"
- "Edison Patent No. 393,462;"
- "Edison Patent No. 309,463;"
- "Schubert Patent No. 359,637;"
- "Brunner Patent No. 95,645."

Defendant's counsel also offers in evidence, as a

physical exhibit, a certified copy of the "File-Wrapper and Contents" of the Joyce patent here in suit; and it is noted that the said file-wraper and contents down to and including the Patent Office communication of Oct. 16, 1902, formed an exhibit on behalf of the complainant National Photograph Company in the suit against defendant in Connecticut based on the Edison patent No. 713,299, decided by Judge LATTY, whose Opinion is reported in 135 Fed. Rep., 810. The rest of the File-Wraper and Contents are now presented in a separate certified typewritten copy, as a physical exhibit.

The witness Massie is now offered for cross-examination at a date to be agreed upon by counsel between the respective parties.

Defendant's counsel produces two volumes containing the printed "Transcript of Record," consisting of the pleadings, testimony and exhibits in the suit based on Edison patent No. 713,299, entitled the National Photograph Company vs. American Graphophone Company; and requests that the same be marked for identification as "Defendant's Exhibit, Transcript in Connecticut Suit on Edison Pressing Process."

Defendant's counsel likewise produces two volumes containing the printed Transcript of Record, the same being the pleadings, testimony and exhibits in the companion suit to the above, based on Edison patent No. 667,662, entitled the National Photograph Company vs. American Graphophone Company; and requests that these volumes, be marked for identification as "Defendant's Exhibit, Transcript in Connecticut Suit on Edison Casting Process."

Adjourned subject to notice.

New York, January 15, 1908.

Met pursuant to agreement at the office of Phillip

Mauro, Esq., 154 Nassau Street, New York City, at
2 p. m.

Present:

HENRY H. DYCK, Esq., for Complainant;
RALPH L. SCOTT, Esq., representing
10 PHILIP MAURO, Esq., for Defendant.

By Mr. DYCK:

It is noted with respect to the stipulation
made at the close of the last session, that cer-
tain of the exhibits, patents, and books referred
to therein are not set up in the Answer. By en-
tering into this stipulation, counsel for com-
plainant does not wish that he be understood
as assenting to the introduction in evidence of
the various patents and books referred to in
the answer to Q. 6, but desires to be understood
20 only as assenting to the statements contained
in the stipulation if it be held by the Court that
the said patents and books referred to in the
answer to Q. 6, are competent evidence.

Counsel for complainant objects to question
6 and the answer thereto, and the introduction
in evidence of the exhibits termed "Defendant's
Exhibits, Scientific American Cyclopaedia of
1893;" "Grove & Thorp of 1895;" "Soap & Can-
dles of 1896;" "British Patent to Field & Hum-
frey of 1895;" "Conley Patent, No. 80639;"
30 "Bingham Patent No. 182,547;" "Bingham Pat-
ent No. 419,914;" "Poumrier Patent, No. 545,
355;" on the ground that none of them is set up
in defendant's Answer in the Joyce suit, and
complainant's counsel further gives notice that
a motion will be brought as soon as possible to
have question 6 and its answer stricken out,
and the exhibits referred to excluded from the
record.

Defendant's counsel replies that the statutes
and practice do not require that every patent
or other exhibit presented in evidence must first
40 be pleaded in the Answer; and defendant now

gives notice that if complainants bring the mo-
tion just referred to, defendant will bring a
motion returnable at the same return day, for
leave to amend the Answer in the suit on the
Joyce patent by inserting in paragraph 8 there-
of, such of the references above referred to by
complainant's counsel, as it may appear to de-
fendant necessary or desirable to insert in the
Answer.

x-Q. 23. Have you ever before testified as a pat-
ent expert in a patent case? 10

A. I have not. But I have occasionally given
affidavits in patent cases, as a patent expert. And
I have also quite frequently given expert opinions
touching novelty or infringements of patents, at the
request of clients.

x-Q. 24. You are the same C. A. L. Massie who
is of counsel in each of the three cases in which
this testimony is being taken, are you not? 20

A. At the end of the first paragraph of my an-
swer to Q. 1, I stated that I had been of counsel for
the defendant in nearly all of its patent suits during
the past ten years. I am one of the solicitors for
defendant in the suit on the Miller & Aylsworth
Process patent, and in the suit on the Aylsworth &
Miller Apparatus patent. I am of counsel for de-
fendant in all three of the suits here consolidated,
but I cannot say at the moment whether I am one
of the solicitors in the Joyce suit. 30

x-Q. 25. You cross-examined witness Holden,
who gave an expert deposition in behalf of com-
plainant in the suit on the Joyce patent, did you
not?

A. I did. I believe I appeared for defendant at
the examination of all of complainant's prima facie
witnesses in the Joyce suit, and conducted the cross-
examinations.

x-Q. 26. I understand, then, that at least, so far 40

as the Joyce suit is concerned, you stand in a dual position of giving an expert deposition, which is substantially an answer to an expert deposition of which you conducted the cross-examination, is that correct?

10 A. If your question means to assert that I have been of counsel for defendant in the Joyce suit, and, as such, cross-examined complainant's prima facie witnesses, and am now on the stand as an expert witness for defendant, you are correct. Whether or not my direct deposition is "substantially an answer" to Mr. Holden's deposition, is scarcely a matter of testimony. I will state, however, that in giving my deposition I was not consciously attempting to "answer" Mr. Holden's deposition.

20 x-Q. 27. In your direct deposition you state that you were assistant Examiner in the U. S. Patent Office for nearly four years. Did you examine the talking-machine art in that capacity?

A. I did not. My acquaintances with the talking machine art began in January, 1898, almost immediately after I left the Patent Office and became associated with Mr. Mauro.

x-Q. 28. In your answer to Q. 4 you speak of the practices in vogue since the "early 90's" in the making of blank cylinders for use on talking-machines. I understand that you were not then speaking from anything in your own experience?

30 A. So far as anything prior to 1898 is concerned, I was not.

In view of the preceding answers complainant's counsel objects to the second paragraph of the answer to direct question 4 as hearsay and incompetent.

40 x-Q. 29. Near the end of the next to the last paragraph of your answer to Q. 4, you speak of "melted wax." Please define what you mean by this term.

A. By "wax," I mean the wax-like composition commonly employed for making sound-records, which in general terms contains free stearic acid, a smaller amount of stearic acid that has been saponified by sodium or caustic soda, or both, a slight amount of some form of aluminum, and a hydrocarbon wax such as paraffine or ceresin.

By the use of the word "melted" in the passage you inquire of, I intended to refer to the melting-point of the wax composition. Of course when the composition has become liquid it is "melted wax" but it might be heated much higher and still be "melted wax." What I meant to say was that in defendant's process the mold is raised to a temperature far above the melting-point of the wax.

In my opinion, the simple expression "melted wax," without any further explanation, means wax at substantially its melting point.

20 x-Q. 30. Your answer does not seem consistent. I ask you, then, if you had a vat of wax whose melting-point is, say 250° to 280°, and the vat and its contents were raised to a temperature of say 400°, would or would not the vat contain "melted wax"?

A. As you regard my previous answer as "inconsistent," I shall have to answer not merely in the affirmative, but add an explanation.

30 The vat you inquire of *could* contain "melted wax." But the vat would also contain melted wax when the wax was only about 280° in temperature. If, dealing with a wax composition having a melting point of somewhere between 250° and 280°, I were asked to fill the vat with the *melted* wax, and no further instructions were given, I would fulfill the requirement by having the wax in the vat at the temperatures indicated, namely, somewhere around its melting-point. The thing that one would understand was wanted would be to have that wax in a 40

melted or liquid condition. And unless some further instruction were given, it would be volunteered and superfluous to raise the temperature of the wax substantially beyond its melting-point.

x-Q. 31. In the same portion of your testimony you say, "defendant's process consists emphatically in subsequently raising the temperature of the mold until it becomes heated far above the temperature of melted wax." In view of the response by the witness Macdonald to x-Q. 43, I ask you what is meant, in your testimony above quoted, by "defendant's process"?

A. By "defendant's process" I mean, and in answer to Q. 4 I meant, having the wax at a temperature of about 400° F., in a large tank beneath which heat was applied; in submerging a solid-bottomed cylindrical record-mold, at normal room temperature, into the mass of the very hot molten wax; permitting the mold to remain submerged and in contact with the superheated wax, until the mold was raised to the same temperature as the wax, some 150° above the melting point of the wax; in then withdrawing the mold from the vat and plunging it at once into cold water, where it remained until the wax had become solidified and the "casting" had been formed; and in subsequently removing the mold with its solid casting from the cold water; and finally scraping out the interior of the casting, subjecting it to cold air to lower it to normal temperature, and "finishing" the cast duplicate.

I also had in mind the process, which in principle is the same, where a jacketed mold is employed, and steam is introduced into the space around the mold and enclosed by the jacket, either simultaneously with, or before, or after, the introduction of the wax, whereby the temperature of the mold and its contents is maintained for a considerable time; and subsequently the introduction

of cold water in place of the steam, whereby the "casting" is chilled suddenly and asymmetrically from the exterior. With regard to the process just described, I understand from Mr. Macdonald's testimony, that the particular apparatus employed—the steam jacketed mold—was employed by him about 1890 and subsequently; and was discontinued some years ago—the large vat containing a mass of superheated "wax" being used instead.

In a general sense I regard these two methods of manipulation as "defendant's process," since both have been employed by defendant, and since they both make use of the same principle, namely, the *superheating* of the wax and its mold, the maintaining of this high temperature, and the subsequent positive application of cold to the exterior of the cylindrical mold and its contents. But, inasmuch as defendant discarded the use of the steam-jacketed mold many years ago, I am willing for the purpose of this cross-examination, to consider as "defendant's process" the carrying out of the principles just stated by means of the large vat and the mold without any steam jacket.

x-Q. 32. What are the difficulties to which you refer in your answer to Q. 3?

A. I assume you are inquiring about the "difficulties" named in the beginning of that answer. What I had in mind was the presence of air bubbles upon or against the matrix surface, which are liable to be entrapped there by melted wax. When this occurs, the resultant casting will present cavities upon its surface, which render the article practically worthless as a sound-record. I also had in mind, but to a less degree, the fact that there might be present in the casting certain impurities that would be either destroyed or driven off if the temperature of the wax, after it has been introduced

into the mold, should be raised materially, and maintained. This temperature-treatment will likewise eliminate the air bubbles referred to. I may add that I understand from conversation with those skilled in this art, and from the reading of the depositions of various experts connected with complainant, that another difficulty frequently encountered by beginners in the molding of duplicate sound-records, is the liability of the casting to chip or crack.

From the study of the testimony of various expert witnesses for complainants, and from my perusal of the decision by Judge PLATT, already referred to by me (135 F. R.), I understand that complainants remove these difficulties or overcome them by introducing their melted wax upward from the bottom of a mold that is either open-ended or has a large hole for the purpose; and that complainants have never made use of the process as described in the Joyce patent in suit. This confirms me in the statement I made in the beginning of my answer to Q. 5, namely, that Joyce had no idea of the difficulties to be met with; that is, because the Joyce process, as described in the Joyce patent, does not prevent or overcome these difficulties.

x-Q. 32. In the fifth paragraph of your answer I observe the following language: "The teaching of the (Joyce) patent is that the wax must not be superheated." Please point out any such teaching in this patent.

A. First, at the bottom of page 1, the patent says:

"The mold * * * is heated, preferably, to near the temperature of melted wax."

As stated by me in answer to x-Q. 29-30, I understand this to mean that the mold is heated to a temperature preferably near (that is, about) the

melting-point of the particular wax composition to be employed. And I agree with Mr. Macdonald that this means a temperature a little *below* the temperature indicated.

Second, Claims 3, 4, and 6 in suit say that the "fused wax-like material" is at "substantially the same temperature as the mold." Now, as the mold is at about the temperature of the melting-point of the wax; and as the wax is at "substantially the same temperature," this must mean that the wax is at about (slightly over, I stress), its melting-point.

In further corroboration of the first part of my answer I note, first, that the passage in line 103 of page 1 does not say "the temperature of the melted wax," which might, and possibly would, mean something different from what the patent actually says. But, since the patent gives not a syllable of statement as to raising the temperature of the wax substantially (or even to any degree) above its melting-point; since it merely says "the temperature of melted wax;" the passages, either taken by itself or in connection with the entire Specification, can refer only to the melting-point of the wax. As an analogous expression, I would refer to the temperature of melted ice, which I think would be understood as meaning somewhere around 32°.

x-Q. 33. But are you not losing sight of the practical side of the matter. Suppose, then, that you were engaged in making sound-records by pouring "melted wax" into a hot mold, and subsequently cooling the mold, and thereafter removing the record. Remembering that Mr. Macdonald has testified (x-Q. 51) that "the melting point of this material is rather vague as it goes from a solid to a semi-plastic condition, gradually approaching a liquid condition through a molasses-like consistency," at

what temperature would you consider it proper and practical to maintain the wax in your kettle?

A. Frankly speaking, I do not believe the process that is set forth in the Joyce patent in suit has any practical side. And I am confirmed in my belief not only by the testimony given in this case by Mr. Macdonald, but also by the very persuasive fact that complainant does not employ the process set forth in the Joyce patent.

With regard to the statement you have quoted from Mr. Macdonald's testimony, I had in mind the fact that these wax compositions do not have a sharp, well defined melting-point as is the case with many definite chemical bodies; and therefore I used such expressions as "substantially" and "about" in referring to the "melting-point,"—meaning thereby a temperature at which the wax has become thoroughly molten or liquid.

If I should undertake to make cost duplicate sound-records, I should undoubtedly avail myself either of the principle of superheating as developed at defendant's factory, and would maintain the wax at a temperature of about 150° above the temperature at which the wax becomes liquid,—or perhaps I would avail myself of the manipulations, temperatures, etc. employed at complainant's factory, and would heat the wax to a temperature of about 20 to 40° above what the Miller & Aylsworth patent calls "its melting-point" (in line 23 of page 2), but I would in this case be particular not to maintain the mold within the rat more than the few minutes indicated, lest I should thereby re-melt the solidified wax that had accustomed upon the bore of my mold.

By Mr. DYKE:

This answer is objected to as not responsive to the question.

x-Q. 34. What I am trying to get at is this: If you were engaged in pouring melted wax into a hot mold (see line 104-106, page 1 of Joyce patent), would you attempt to pour it in its "molasses form"? Or would you heat the wax until it had become in a liquid condition which Mr. Macdonald has stated in his answer above referred to as being approached when the heating of the wax is continued.

A. In answering your previous question I answered as I did because the question did not seem limited to the "Joyce process." In view of your objection, I understand your question to be what I would do in attempting to carry out the process that is described in the Joyce patent in suit. I should certainly, in that case, not undertake to pour out the material while it was still in a viscous condition, but would wait until it was liquid, so that it could be readily poured. But neither would I undertake to heat the wax to a temperature far and away above a temperature sufficient for me to pour it. I observe that the Miller & Aylsworth patent in suit teaches us that the ordinary commercial record-composition now used, is sufficiently liquid to flow readily at a temperature only some 20° to 40° above its "melting-point." As compared with a temperature of 120° to 150° above its melting-point, a temperature of 20 to 40° is comparatively a slight increase. So far as I am at present aware, a temperature of 5 or 6 degrees above the mean or average temperature of the wax in its "molasses-like" consistency, would be sufficient to enable one to pour the wax.

x-Q. 35. You will admit, of course, that it would pour easier at a higher temperature than it would at a lower temperature than that which you have just indicated?

A. If by "pouring" you mean the operation of

discharging the contents of a pot or ladle into the mold, certainly a material that is liquid will pour easier than a material which is in a viscous condition. But so far as such operation of pouring is concerned, I do not believe that a wax composition at a temperature 150° above its "melting point" will "pour" out of a ladle into a mold any more readily than the same composition at only a few degrees above the temperature at which it has become thoroughly liquid throughout its entire mass.

I understand that there is no well defined sharp-indicated point at which a semi-viscous or viscous wax composition such as we are dealing with here becomes on the instant thoroughly and completely liquid. But, as soon as the material has become thoroughly liquid, additional heating from then on will not enable us to "pour" it any more readily.

It is also conceivable, and quite possible, that super-heating to a substantial degree may so affect the particles of the material as to increase its capacity for entering into the infinitesimally minute irregularities of the matrix surface. In short, it is conceivable and possible that super-heating as practiced by defendant may result in the production of a truer, and therefore a better, cast duplicate sound-record. But the Joyce patent in suit does not even hint at any such advantage, and therefore the Joyce patent does not (even indirectly) teach us to heat our wax substantially above the temperature at which it becomes melted.

Adjourned subject to notice.

New York, January 17, 1908.

Met pursuant to agreement at 2 p. m.
Present:

40 FRANK L. DYER, Esq., for complainants.

Cross-examination of the witness MASSIE continued:

x-Q. 36. Having reference to the numerous patents and publications referred to by you in your direct examination, do you find any one of them disclosing the suggestion of casting a cylindrical object in a continuous mold, and then after the material has set, and while it is still in the mold, in removing out its interior, so that the mold serves the double function of defining the exterior surface of the object, and also of acting as a chuck for rigidly grasping the object during the remaining operation?

Objected to as immaterial.

A. I have not observed in any of the references cited by me any such description.

x-Q. 37. The statement contained in my last question is descriptive of operations that are common to the process disclosed in the Aylsworth & Miller patent No. 688,015, in suit, as well as to the process practiced by defendant, is it not?

A. That is not correct. In the first place, where your previous question speaks of "casting a cylindrical object in a continuous mold," I do not think these words are properly descriptive of the process disclosed in the Aylsworth & Miller patent inquired of. I mean by that, that if one were directed to carry out the casting process using fusible material and a cylindrical mold, I do not think it would occur to him to carry out the particular manipulations employed as described in the Aylsworth & Miller patent.

In the second place, it appears from the testimony given on January 3, 1908, by Mr. Macdonald, that defendant does not remove out the interior of its cast duplicates before removing them from their molds, but merely scrapes them out and sub-

quently performs the remaining operation after the duplicate has been removed from the mold.

However, regarded as a sweeping proposition, it is true in general terms that the Aylsworth & Miller patent describes the remaining out of the solidified deposit that you speak of as a casting, while the same is still held in its matrix; and that in defendant's process the interior of the casting is scraped out to produce concentric rings while it is still in its mold.

x-Q. 38. I understand, then, that in a broad or general sense, you do not make any distinction between the remaining operation suggested in the Miller & Aylsworth process patent, and the scraping operation performed by defendant, or in other words, you admit that in both instances while the solidified, hollow cylindrical subject is still retained in the mold, an operation is performed on its interior by which excess material is removed, and concentric rings are formed?

A. In a broad and general sense, yes. The distinction I had in mind, is not answering absolutely and without any qualification is that the operation of the Aylsworth & Miller patent is the complete operation of "finishing;" whereas the operation performed in defendant's process, before removing the duplicate from its mold, is only preliminary, and is not the "finishing."

x-Q. 39. With the operation performed by defendant there is at least a preliminary finishing, is there not; that is to say, the record is finished so far as the space which exists between the rings is concerned, and also so far as the edges of the rings?

A. I will not commit myself as to whether or not it could be called a "preliminary finishing." But, as I understand the question, you are correct.

x-Q. 40. That is to say, the record is partially finished on its interior while still in the mold in defendant's process?

A. I am not prepared to consider anything as "partially finished," though I do not say that the idea is inescapable. But certainly the interior of the record has been acted upon by an implement which, I understand, defines the spaces between what we have been calling the concentric rings,—and all this before removing the casting from its mold. The subsequent "finishing," I understand, consists of removing the circular faces of the rings, and in trimming the ends of the hollow cylindrical casting.

x-Q. 41. You do not pretend to assert, do you, that after the record is removed from the mold in defendant's process any operation is performed on the material which exists between the rings, or on the sides of the rings themselves other than their interior faces?

A. I do not. My answers were based upon Mr. Macdonald's answers to Q. 5 and to x-Qs. 47 and 48. But I think I should call attention to the stipulation given in the suits on the Miller & Aylsworth patents, where a statement is made that seems to indicate that all the operations of "finishing" except the cutting off of the ends of the casting are performed before the removal from the mold.

x-Q. 42. Are you able to state how much material is removed in defendant's process in trimming off the inner faces of the rings which are formed while the record is still in the mold?

A. I have seen the operation performed several times, but I did not observe particularly how much material was removed, and I could not undertake to answer your question off hand.

x-Q. 43. The purpose of this subsequent step is, as I understand it, to slightly trim off the rings so that they will fit the mandrel of the phonograph or graphophone, is this correct?

A. That is correct.

x-Q. 44. If the phonograph or graphophone were provided with a mandrel which would be fitted by the rings as formed in the record while still in the mold, you would admit, I suppose, that the subsequent operation of trimming off the rings would not be necessary?

A. If the duplicate as it exists in the mold before any reming operation whatever should fit the mandrel of the machine, there would be no need for taking any further steps to make it fit. In the same way, if the "reming" should produce a fit, there would be no need of further treatment to make a fit.

But it is quite conceivable that after the casting has stood for a day or so, removed from its mold, it may no longer fit accurately upon the mandrel of the machine, so that subsequent treatment would be necessary.

x-Q. 45. You have appeared as counsel and have examined and cross-examined experts in many patent suits, have you not?

A. Yes.

x-Q. 46. And I presume you have protested against the answering of questions in an involved way when they can be answered categorically, have you not?

A. I do not recall having made such objection except in cases where the witness has persistently given unresponsive and volunteered answers. I do not recall having protested merely on the ground that the witness's answer was not couched in short and concise language. I do recall very frequently that expert witnesses have declined to answer a categorical question, for the reason (given by them) that a categorical answer to the question as framed would not be the whole truth and would be misleading.

x-Q. 47. Have you any objection to answering

questions categorically when such an answer is appropriate?

A. I would prefer to do so, when in my opinion such answer is appropriate. But if, in my opinion, merely to answer categorically a question would not present the facts in what I believe to be the proper light, I shall endeavor to use sufficient words to make my belief plain.

x-Q. 48. Having reference to the doubt expressed by you in answer to x-Q. 44, you are aware of the fact, are you not, that in carrying out of the Miller & Aylsworth process by complainant the interior of the record is subjected to a single reming operation?

A. I so understand the description given in the patents in suit.

x-Q. 49. Referring now to x-Q. 36, and assuming that the expression "casting a cylindrical object in a continuous mold" is comprehensive enough to include any process for forming or producing such an object either by introducing molten material over the top of the mold, or introducing molten material from the bottom of the mold, would the statement as so considered define an operation which is to be found in any of the numerous patents and publications referred to by you in your direct examination?

The question is objected to as immaterial.

A. It would not.

x-Q. 50. And such an operation as so defined would be descriptive of the operations described in the process patent in suit to Miller & Aylsworth, and in defendant's process, assuming that the reming operation includes either a complete finishing of the interior of the record as well as a partial finishing thereof as practiced by defendant?

A. As thus broadly stated by you, and with the assumptions given, my answer is in the affirmative.

x-Q. 51. That is to say, aside from the question whether or not the Clatus involved define it, there is a common generic statement of operation which applies both to the Miller & Aylsworth process and to the defendant's process?

A. Defendant carries out a process involving the employment of a hollow cylindrical mold and molten wax-like material, and the two patents in suit describe the use of such implements. Defendant obtains by these implements a duplicate sound-record, a casting; and the patents describe the production of a duplicate sound-record by the two implements named, which I am willing to call a casting. Defendant's process, and the description of the patents, involves the removal of the material from the interior of the casting while it is still within the mold and comparatively soft. In this sense I answer your question in the affirmative.

x-Q. 52. And in the same sense you admit that the operations as broadly set forth by you in the preceding answer, were, to the best of your knowledge, novel with Miller & Aylsworth?

A. To the best of my present knowledge the Miller & Aylsworth patents contain the first disclosure of utilizing the mold as a chuck for rotating the cast duplicate, so as to remove material from its interior before the casting has been withdrawn.

x-Q. 53. You are aware of the fact, are you not, that in the two suits which were tried before Judge PLATT on certain Edison patents, the alleged infringing operations of defendant involved the casting of a spiral rib on the interior of the record, and did not involve the performance of any operation on the bore of the record while the latter was still in the mold; and that the adoption by the defendant of its specific process, as now practiced by it, was subsequent to its commercial use of the process involved in those suits?

A. In examining the proofs in the Connecticut suits, I did not have that point in mind, but I think it quite likely that in December, 1901, and December, 1902 (the dates of filing those two suits), defendant was producing cast duplicates having a spiral rib formed by a core, and was not making use of an implement for removing the material from the bore (subsequent to the casting operation) in order to produce ribs.

If I am correct, it is also true that defendant adopted the specific form of process established in these cases subsequent to the use of the specific form of process established in the Connecticut cases.

x-Q. 54. Do you have any doubt as to the correctness of the statements given in my last question?

A. I do know that about 1901, defendant was making cast cylinder records having an internal spiral rib formed thereon by casting. I also know as a fact that defendant is now forming its internal ribs by removing the material with an implement, subsequent to the act of casting. But I do not know when the change was made. And I do not care to commit myself to the statement that this change was made subsequent to the taking of the proofs in the Connecticut cases. With this explanation I will say that I have no reason to doubt the correctness of your statement in x-Q. 53.

x-Q. 55. Is it your understanding of the present suits so far as the Miller & Aylsworth patents are concerned, that the complainant asserts any such interpretation of these patents as would include the first process practiced by defendant which was held by Judge PLATT not to infringe the Edison patents?

A. Your question seems to me to be somewhat "involved." It also seems to ask me as a witness to state what views of complainant's mental attitude are held by defendant's counsel. If you ask whether defendant regards complainant as attempting, by

the Miller & Aylsworth patents, to enjoy the precise identical method employed by defendant in carrying out its process which Judge PLARR passed upon, I would say that with respect to Claim 5 of the Aylsworth & Miller Apparatus patent at least, I do not find this Claim to contain any statement about remaining out the interior of the casting before removal from the matrix.

10 If by your question you mean to assert that the gist of the alleged infringement complained of in the present suits on the Aylsworth & Miller and Miller & Aylsworth patents consists of reaming the casting while still in the matrix, and in producing concentric rings instead of a spiral ring, I will say that with such assumption, and with my understanding of the particular methods employed by defendant, as made out in the Connecticut suits,—that the two Miller & Aylsworth suits are not intended to include the first specific form of process practiced by defendant, which was held by Judge PLARR not to infringe the Edison patents.

20 x-Q. 56. Regarding the fifth claim of the Aylsworth & Miller apparatus patent, you remember, don't you, that defendant's practice of casting the name of the record on the end simultaneously with the formation of the record surface, succeeded the process which was considered by Judge PLARR?

30 A. I do not. I have no idea when defendant first began to cast the name on the end of its cast records. It is quite possible, and for present purposes I will admit, that this feature has been introduced subsequent to Judge PLARR's decision. I am also satisfied that nothing, or at least very little, if anything, appeared in those Connecticut suits regarding this feature.

40 Having this feature—casting the name of selection—included as part of your x-Q. 55, and with the understanding just given, I will say that if the

casting of the name be regarded, by complainant as the gist of the infringement complained of under Claim 5, that this idea was not involved in the suit before Judge PLARR.

x-Q. 57. Having reference now to the suit on the Joyce patent, and referring to the numerous examples given by you in which processes for making canilles are described, what was the object in those processes of preventing the mold prior to the introduction of the molten material therein?

A. On page 266 of "Defendant's Exhibit, Soaps & Canilles," I learn that the object of heating the mold and of subsequently applying cold water (the two together, as I understand it, forming the complete process), is to produce "a polished appearance" to the surface of the cylindrical casting.

From "Defendant's Exhibit, Field & Hunfrey British Patent of 1856," I gather that the application of the cold water (which I have stated to form a part of the process of first heating the mold and subsequently, after filling, applying cold water), is to prevent the formation of crystals.

I also understand that a melted wax (or wax-like composition) when cast upon a hot metallic surface, will come into more intimate contact throughout the whole of such surface, than when cast upon a cold metallic surface. The foregoing statements contain my understanding of the particular purpose in view in the various references that deal specifically with the making of canilles.

With regard to the references that disclose the manufacture of printers' rollers, I understand that the same reasons exist, and an additional one, namely, that such rollers are comparatively long, and the cylindrical molds are also comparatively long; that the flowing of the material into such long molds (and around a central core), would be inter-

ferred with if the mold and core be cold, because in the course of its flowing into the hollow space, the cold molds would chill the molten material and cause it to become viscous, if not actually solid. Hence the molds and cores are heated beforehand, in order that the entire mold may be completely filled with the liquid material.

10 x-Q. 58. One distinction that you point out between the Miller & Aylesworth process and defendant's process, is that with former the mold is dipped slowly and gently into the molten material, which is not necessary with defendant's process. Would defendant's process be altered if the mold were dipped slowly and gently into the molten material?

20 A. If the molds used by defendant were lowered, open-end upward, into the vat containing super-heated wax, this lowering being done in a very slow, gradual manner, it would not be what defendant is now doing. But I do not see any difference in principle, except that such slow immersion would be unnecessary, with defendant's apparatus.

x-Q. 59. By being the same in principle you mean the same for all practical purposes?

A. I think so.

30 x-Q. 60. Now if defendant's process be carried out in this way which you say is the same in principle as the process which it actually does perform, before the wax enters the mold the mold would be heated substantially to the temperature of the wax, would it not?

40 A. When I said that the two proceedings would be the same in principle, I did not mean to say that whereas defendant now fills a cold mold, any filling of a hot mold would be the same identical proceeding. Because we must not lose sight of the additional facts that not only must the mold in defendant's process be filled (whether hot, as suggested by

you, or cold as in actual practice by defendant), but the mold and the material must be super-heated and the super-heat maintained. So far as the mere filling is concerned, I will answer your question in the affirmative.

x-Q. 61. Limiting yourself to the art of making cylindrical phonograph records, do you find any disclosure in any of the patents and publications referred to in your direct examination of the process in which molten material is cast in a mold, the temperature of the latter being approximately the same as the temperature of the molten material?

80 A. To make my answer complete, I will refer, for example, to the Young British patent as discussed by Judge PLATT in the opinion reported in 135 Fed. Rep., to the effect that Young touches on the use of a hot cylindrical mold having a reverse sound-record upon its bore, which it is true was described by Young for use with celluloid, but which could just as well have been used with a fusible material.

I also refer to the work done at defendant's factory as pointed out by Judge PLATT in the same opinion, which I understand is likewise described in certain exhibit depositions introduced into these cases by defendant.

80 It is the fact that so far as I am at present informed, I do not find any single patent or publication prior to the filing of the Joyce patent in suit that discloses the production of a cast sound-record by pouring molten wax-like material into a hot mold. But I should add that the Joyce patent in suit does not describe any such process that can be practically and commercially carried out.

Adjourned subject to notice.

New York, Jan. 20, 1908.

90 Re-direct examination, taken by consent of com-

plainant's counsel, in his absence, subject to his right to enter objections and to re-examine.

Redirect examination.

Rd.Q. 62. In view of the objection entered after x-Q. 28, please state your authorities for saying you understand *beginning at least as early as the early 30's* phonogram blanks were made by casting, as already described by you?

A. When I first became associated with Mr. Mauro, in January, 1888, I soon learned, as a matter of general information, that the blank cylinders or phonogram blanks were formed by casting the melted wax-like material into hollow cylindrical molds provided with central cores; and that this method had been practiced both by the American Gramophone Co. and the Edison phonograph companies since the early 30's. This was not a special piece of information vouchsafed to me alone by one or two persons only, but was a matter of *general reputation*, well known to all persons connected with the talking-machine business.

Another source of my information is certain testimony for the New Jersey Patent Co. (one of the complainants herein) in a patent suit now pending in the Circuit Court of the United States for the District of New Jersey, in which the present defendant's selling agent is sued upon a certain patent to J. W. Aylsworth (who is joint patentee with Mr. Miller in two of the patents here in suit). In that Aylsworth suit in New Jersey, many witnesses on behalf of said complainant have testified to the effect that *in the early 30's* defendant, as well as the Edison companies, was making cast blank cylinders for sound-records, and in fact that the Edison companies began this operation even earlier.

In the Edison deposition (given Oct. 9, 1903, in

the Connecticut suit) in evidence herein, beginning at direct question 51, Mr. Edison testified that the molding of phonogram blanks began with the idea of making the blank entirely of one material, which was patented to him by U. S. Letters Patent No. 332,462. That patent is dated May 8, 1888.

In the same Connecticut suit (on Edison patent No. 713,269) Mr. Frank L. Dyer (who is complainants' counsel herein) appeared as expert for the complainant, and on June 25, 1903, in answering my cross-questioning, admitted in substance that "for the last ten years or more" phonogram blanks have been made by casting a molten material in a cylindrical mold and withdrawing the blanks after radial shrinkage. Mr. Dyer added that the mold was continuous (and not sectional), and that the castings were withdrawn from the blanks by direct longitudinal movement.

In Judge Platt's opinion in *135 Fed. Rep.*, so often referred to, I find many statements to the effect that this process of producing blanks had been practiced by both complainant and defendant for many years before the dates of filing the Edison patents there in suit.

Rd.Q. 63. I will ask you to compare the process of the Joyce Claims (involved in this suit) with that of the Claims of the Edison patent No. 713,269 declared on in the Connecticut suit before Judge PLATT, and incidentally with defendant's process?

A. The suit referred to was on Edison patent No. 713,269, granted Nov. 11, 1902; and the Claims declared on were Claims 2 and 3 thereof. On June 24, 1903, Mr. Frank L. Dyer, of counsel for complainants herein, having testified as an expert for the complainant therein, was cross-examined by myself. He was comparing the subject-matter of Claims 2 and 3 of said Edison patent then in suit, among other things, with the application for the

Joyce patent here sued on. I find on printed pages 88-9 of the Transcript of that suit, the following testimony by Mr. Dyer:

10 "Still another interference was declared between the application for the patent in suit [Edison 713,209] and an application of Maurice Joyce, who described the identical operations performed by defendant *except the simple step of superheating the material*. In other words, Joyce made a matrix by covering a master with graphite and electroplating thereon, and he secured duplicates from such a matrix by *casting molten material thereon, and finally he removed the duplicate by radiant shrinkage*. The two processes [Joyce's and that of Edison 713,209] were regarded by the Patent Office as practically identical, and no question was ever raised by Joyce to the contrary, notwithstanding the fact that under the rules of the Patent Office simple opportunity is offered for dissolving interferences where no interference in fact exists."

(Italics and matter in brackets mine.)

15 Again, in answer to my x-Q-27, Mr. Dyer said that Joyce—

20 "described the exact process used by defendant except the specific step of superheating the material to eliminate air bubbles." (Italics mine.)

30 The same Mr. Frank L. Dyer also testified as an expert witness for complainant in rebuttal in the same suit. On April 25, 1904, in answer to direct question 102, he discussed the Maurice Joyce application filed Oct. 13, 1897, and bearing the Serial No. 655,027,—being the application which accreted into the Joyce patent here in suit. Mr. Dyer stated that on June 10, 1902, Joyce presented a claim corresponding with the second claim of the aforesaid Edison patent No. 713,209, then in suit.

40 Mr. Dyer noted that the Interference involved the

second and third claims of the Edison patent then in suit; and that the process of the said Edison Claims 2 and 3 was *not* limited to pressing a blank but included the casting with molten material; and that the Interference was decided in Edison's favor and against Joyce. In answer to x-Q-129, Mr. Dyer said Joyce filed a concession of priority in favor of Edison.

Mr. Mauro has pointed out the result of the Connecticut litigation upon said Claims 2 and 3 of said Edison patent No. 713,209.

From the foregoing examination it will be observed: *First*, that Claims 2 and 3 of the said Edison patent No. 713,209, cannot be enforced against this defendant. *Second*, that Joyce is not entitled to assert any claim superior to, or commensurate with, said Edison Claims 2 and 3. *Third*, the process set forth by the Joyce Claims in suit, differs from the process set forth in said Edison Claims 2 and 3 *wholly* by reason of the *heating* of the Joyce mold, which I have already quoted Mr. Dyer, as meaning "preheating" (in my answer to Q. 9). And, *Fourth*, that defendant's process (both then and now) differs from the process set forth by Joyce in that Joyce *pre-heats and does not super-heat*, while defendant does not pre-heat and *does super-heat*. I may add, as *Fifth*, that the two differ essentially in that defendant's process is *operative and highly successful*, while the Joyce "process" is *inoperative and unsuccessful*, and has not gone into use.

In short, to sum up, we may assume the process set forth in Claims 2 and 3 of the said Edison patent No. 713,209 as the *basis or "starting-point"* from which to reckon. Defendant's process was adjudged by Judge PLATT to differ therefrom, because (among other things) of the super-heating,

which is still the characteristic feature of defendant's process; while the Joyce process differs therefrom by pre-heating but *not* super-heating. That is, defendant departs from the "common starting-point" in *one* direction, while the Joyce process departs therefrom in *another* and *different* respect.

10 Rd-Q. 64. Please compare the production, by means of the hollow cylindrical record-mold, of duplicate sound-records, by (a) pouring into the mold a *melted* composition of *wax-like* material, or (b) by inserting into the mold a hollow cylinder of the same material in a comparatively *solid* consistency, and heating the same (without melting), and applying pressure, or (c) by inserting a *celluloid* shell into the mold and heating and expanding the same, in view of the same Mr. Dyer's testimony in said Connecticut suit?

20 A. In the said deposition, in answer to my x-Q. 23, Mr. Dyer stated that the Edison application (for the said Edison patent No. 713,209) was placed in interference with a certain Lambert patent; subsequently with a certain Capps application; and still later on with the Joyce application (now the Joyce patent in suit).

Regarding the Lambert patent Mr. Dyer said:

30 "The matrix was formed exactly like those of defendant by coating an original master with graphite and electroplating thereon, and . . . celluloid duplicates were secured from such a matrix by first [inserting a celluloid tube into the matrix and then] softening a [the] celluloid tube with a solvent and expanding the same by steam pressure." (Matter in brackets mine.) And that all the tribunals of the Patent Office refused to dissolve this interference (involving, as it did, Lam-

bert's *celluloid scheme* and Edison's use of a *solid wax-composition*.

The Capps process, Mr. Dyer testified, employed a celluloid tube in a matrix, and the celluloid was expanded by the evaporation of a solid, and the Capps interference was not dissolved.

In the Joyce process, as we know, the molten or liquid wax was poured into the cylindrical matrix.

In answer to x-Q. 23 Mr. Dyer showed that the Joyce process of pouring the melted material into the mold was regarded by the Patent Office, by Mr. Joyce, by Mr. Edison, and by himself "*as patently identical*" with the Edison process of inserting a "blank or cylinder, in a relatively *solid* state."

In answer to x-Q. 27 Mr. Dyer testified that the Patent Office decided that the Edison process of warming the solid blank (and pressing it while plastic but still solid) was "patentably allied" with a casting process like Joyce's.

After Mr. Dyer had admitted that where the Edison patent No. 713,209 speaks of "impressing" upon "blanks" it meant specifically *pressing* the wax-like cylinder existing in a comparatively *solid* state (as distinguished from being liquid or molten) against the matrix,—in x-Q. 29 he said this language of the Edison patent was likewise applicable to the Joyce process where the composition was *melted* and poured into the mold; and that the Patent Office had sustained this view.

I will quote my cross question 50, put to Mr. Dyer:

50 x-Q. You have stated on more than one occasion that the process, or rather step, of melting the record material and pouring it into the mold while in a liquid state so as to form the phonogram by casting, is the equivalent of

those steps of the preferred process [of the Edison patent No. 713,209] which consist of taking an ordinary blank and inserting it in the mold and subsequently expanding it by heat or pressure or both. What is your authority for this statement? I understand that the [Edison] patent in suit makes no such disclosure in its terms." (Matter in brackets mine).

Mr. Dyer's answer begins:

"If I were not capable of forming an independent judgment on this question, I should say that my authority was the expert's in the Patent Office, who declared an interference between Edison and Joyce and thereby held that one process was the equivalent of the other. I do not, however, need any special authority for the support of my opinion other than ordinary familiarity with mechanical matters in general * * *"

And Mr. Dyer proceeds to give his reasons very clearly, saying that if the two operations inquired of should be more closely allied than they were, "they would be mechanically identical."

In answer to x-Q. 51 Mr. Dyer admitted that generally speaking he should say that when Edison—by the Edison patent No. 713,209, which Mr. Joyce has admitted to be an anticipation of his own (Joyce's) invention, and which the Court has held not infringed by defendant—had once disclosed to the public his process of making duplicates by means of inserting a blank and expanding the same (while yet of a comparatively solid consistency) by mechanical pressure, then,—“the possibility of casting them would be obvious”; especially, as Mr. Dyer pointed out in answer to x-Q. 55, since the casting of duplicates was known to the public through the

medium of Edison's prior patent No. 484,582 (the "split mold patent").

Again, the said Edison patent No. 713,209, (there in suit) enumerated as the material of the duplicate "phonogram" not only the ordinary wax-like compositions but also *celluloid* and similar materials. And in answer to my x-Qs. 76-77-78, Mr. Dyer admitted that celluloid was "plastic" for the purpose of taking impressions from the mold and that his term "plastic" correctly described and included the ordinary wax-like cylinder-composition as well as celluloid and similar substances, with which the process of said Edison patent might be carried out.

From the foregoing review of Mr. Dyer's expert testimony, it will be perceived, *First*, that Mr. Joyce, Mr. Edison, Mr. Dyer, and the Patent Office believed and asserted that the formation of *cast duplicates* by pouring a *liquid* wax-like composition into the mold, was the mechanical equivalent of forming a duplicate by expanding within the mold a warm yet *solid* hollow cylinder of the same composition, and that the former was obvious after the latter became known. Briefly, *pressing with solid wax* is equivalent to *casting with melted wax*.

Second, that complainant's counsel and expert (Mr. Dyer) and the Patent Office agree that the formation of *celluloid* duplicates, by inserting a hollow shell of celluloid into the matrix and then heating and expanding it by pressure, is the mechanical equivalent of the above *pressing* process of the Edison patent. Briefly, *pressing with solid wax* is equivalent to *pressing with softened celluloid*.

And, *Third*, since "things equal to the same thing are equal to each other," that *pressing with softened celluloid*, is equivalent to *casting with melted wax*.

RD-Q. 65. Please apply the information you 40

have gathered from Mr. Dyer's deposition, to the process of the Young British Patent; and compare the same with the process of the Joyce Claims in suit?

A. The Young British Patent discloses the same hollow cylindrical record mold that Joyce describes. Young directs the preheating of this mold, and so does Joyce. Young then directs the insertion of the celluloid shell, and makes use of the heat already imparted to the mold for heating and softening the celluloid; whereas Joyce makes use of what is the "mechanical equivalent," namely: the pouring into the same heated mold of the melted composition. Finally, Young directs the collapsing of his *celluloid* duplicate in order to withdraw it; whereas Joyce avails himself of the greater shrinkage of the composition *he* is dealing with, in order to withdraw the casting,—which (as Judge PLATT has already adjudicated) is an *obvious* expedient with such materials.

In short, the process of the Joyce Claims in suit is substantially the same as that of Young; because it differs therefrom solely by employing what counsel's counsel has admitted to be a mechanical equivalent, resulting in what Judge PLATT calls an obvious modification of a subsequent manipulation. Q. Referring to 2-Qs. 36 and 40, I will ask if you find any Claim here in suit that covers the idea of utilizing the mold not only for outlining the exterior of the casting, but also as a chuck? And also do you find any Claim here in suit that covers the idea of reaming out the interior of the duplicate of sound-record before the latter has ever been removed from its mold. And, finally, do you find any Claim here in suit that covers the production of concentric ribs upon the interior of the sound-record, whether by reaming or otherwise?

A. I do not. There is no such Claim in suit.

Of course some of the Claims include one or more of the ideas inquired of, but along with other features *not employed by defendant*. In answering this question it is not necessary to refer to the Joyce patent, which makes no mention of reaming out the interior. In the Miller & Aylsworth process patent, Claims 3 and 4 recite, as one of the steps of the process, the "finishing the bore of the duplicate"; and thereafter recite, as a subsequent step, "separating the duplicate from the matrix." Thus only by implication is the idea inquired of in your question to be found in these two Claims. But as pointed out in my direct examination, these Claims, 3 and 4, recite *three* steps as constituting the process; and since defendant does not employ the first step, defendant does not employ the process of Claims 3 and 4.

The same remarks apply to Claim 5 of the Miller & Aylsworth process patent, except that this Claim expressly directs us to finish the bore of the duplicate "before the latter has become hard." So far as this specific recital is concerned, I find the same idea in the Edison patents No. 333,462 and No. 333,463, already made exhibit hereto, viz., that the phonogram blank is to be *heated* so as to make it comparatively *soft* for the action of the reaming tool.

Of the Aylsworth & Miller apparatus patent, Claim 5 contains no mention of reaming or the use of the chuck. But Claims 6 and 7 do recite, but as one element of an alleged "combination" of two elements, means for reaming the interior of the duplicate while the latter is still held by the mold, Claim 7 specifying that the means employed will produce the concentric ribs. But since these two Claims call for an alleged "combination," and since defendant (for reasons pointed out in my direct examination) does not employ the first one of the two ele-

ments of the alleged combination of Claims 6 and 7, defendant does not employ the alleged "combination" in its entirety.

To make my answer to your question more positive, I say that, for the reasons just pointed out, the particular feature or idea which was inquired of in s-Qs. 36 and 49, and which feature or idea complainants' counsel seems to have settled upon as being one of the two features or ideas that are common to the defendant's process and apparatus on the one hand and those of the Miller & Aylsworth and Aylsworth & Miller patents on the other hand, are not claimed in either of the said patents; they are merely implied in some Claims, and included in others as elements of an alleged "combination."

Ed-Q. 67. What have you to say regarding the novelty or obviousness of reaming out the interior of the casting before it has been removed from its mold?

A. I will recall first that the reaming out of the interior of phonogram blanks was old and well-known, and has been described in various early Edison patents. Second, the production of a phonogram blank having an internal spiral rib formed by casting is the specific disclosure of the Edison patent No. 414,701; but the same Edison patent likewise discloses internal ribs in general, which I understand to include concentric ribs, which (for the reasons pointed out) could only be made by reaming, and could not be made by casting. Therefore, in view of the Edison patent No. 414,701, there could be no novelty or ingenuity required in producing a phonogram cylinder having internal concentric ribs formed by reaming.

In the third place, if one wishes to produce internal concentric ribs, he must do so by reaming; and he would preferably do so while his material is comparatively soft. And this last idea is fully disclosed

in the two Edison patents No. 293,462 and No. 398,463 referred to.

The proposition, then, comes down to something like this: We have before us a cast cylindrical sound-record within whose bore we desire to produce concentric ribs (an old feature) by reaming (the only conceivable method); and we have already been taught that the material should be warm and comparatively soft for satisfactory reaming. Now, then, shall we wait until this casting becomes cold, and then re-heat it to ream it out; or shall we take advantage of its present warm and comparatively soft condition, and ream it immediately?

In my opinion there is only one answer to this: It would be perfectly obvious to any intelligent mechanic that he could at once, as soon as his casting had become "set," and while it is still comparatively soft, and before waiting until he had chilled it down so as to remove it from his mold,—I say, that it would be perfectly obvious to him that he could at once proceed to ream out its interior. And I believe that all persons having in mind the state of the art as above set forth by me, will agree with this view.

I would refer here to what I understand to be the regular practice in all well regulated kitchens, namely, that the pots and pans that have been used are cleaned out at once, while the utensils themselves and the grease, etc., are still warm and the latter comparatively soft and easy to remove. I do not think any one would regard it as a patentable invention in some cooking-school experts who undertook to teach us that we must clean out our pots and pans while they are still warm and the contents still soft, instead of waiting until all had gotten cold.

In fine, so long as spiral ribs were desired, they

could be made (and were made) during the process of casting the cylinder. As soon as concentric ribs were desired, as they could not be produced by casting, they would have to be produced by reaming,—and such reaming would naturally be performed while the material of the casting is still warm, and still in the mold.

10 Rd-Q. 68. Do you find in the prior art, and particularly in the talking-machine art, any disclosure of the production of a duplicate by means of a hollow cylindrical record-matrix, and the subsequent application of mechanical treatment to the interior of such article, while the latter is yet warm and before it has been removed from its mold or matrix?

20 A. The aforesaid Edison patent No. 713,293, describes, and in Fig. 2 illustrates, the production of a duplicate sound-record II, by means of the record matrix A. While B is still within A, and is warm and comparatively soft, the mandrel C is employed for shaping the interior of the duplicate B. This Edison application was filed March 5, 1898.

30 In "Defendant's Exhibit, Lioret Patent No. 528,273" (granted Oct. 30, 1894), among other things, I note—referring, for instance, to Fig. 8—that the duplicate sound-record c, has been produced within the cylindrical record-surface a1, and that, while the duplicate c is still warm, and comparatively soft, and is still retained within its matrix, the tapered mandrel a2 is forced downward to shape the interior bore of the duplicate record.

40 I also refer to Lambert patent No. 645,220, granted March 29, 1900 (which, by the way, is the patent whose application was in interference with the Edison application for the Edison patent No. 713,293, as stated in my examination of Mr. Dyer's former testimony). In this patent the duplicates sound-record is formed within a cylindrical electroplate matrix, and while still held within its matrix, and still

comparatively soft, pressure is applied to the interior of the said duplicate sound-record.

I likewise refer to the Joyce patent here in suit. Joyce's cast duplicate I, is formed within his continuous cylindrical mold II, and while still warm, comparatively solid, and not yet withdrawn from the matrix, its interior is acted upon by the tapering cone.

10 Rd-Q. 69. Referring to s-Qs. 55 and 56, do you find any Claim in suit that covers the feature of those questions?

20 A. I do not. Claim 5 of the Aylsworth & Miller Apparatus Patent is the only Claim in suit that mentions or refers to the idea of casting the name of the particular selection simultaneously with the formation of the casting. And Claim 5 recites this only as one element—and a secondary element at that—in a combination comprising three other elements, none of which defendant uses. And, since defendant does not use the three principal elements of this Claim 5, defendant does not use the "combination" recited by the Claim.

30 Considering this Claim 5 together with my previous answer, it is the fact that the only two features or ideas that complainants' counsel has pointed out as common to defendant's process and apparatus on the one hand, and those of the two Miller & Aylsworth patents on the other,—are features for which neither patent has any Claim.

Rd-Q. 70. What can you say as to the novelty of this feature of casting the name simultaneously with forming the duplicate?

40 A. It is absolutely without novelty, for the reasons stated in my answer to Q. 20. In making metal castings, it has for years been the common practice to cast thereon, simultaneously, the name of the maker, patent-markings, etc.

10 R9-Q. 71. Compare the process claimed by the Joyce patent in suit with the process as carried out by defendant and the modification of defendant's process suggested by complainants' counsel in X-Qs. 55-60, namely, that the mold be inserted slowly.

A. Defendant's actual practice submerges the cold mold, in a *hap-hazard* fashion, into the *superheated* material. The first result of this is merely to fill the mold, but it is filled with *superheated* material; and the next result is not only to heat the mold but to heat it to a temperature far above the melting-point of the wax. And, finally, this temperature is maintained for some minutes, and air-bubbles, etc., eliminated.

The modification suggested by complainants' counsel—the only change being to lower the mold gradually and slowly—would result in having the mold heated before any of the melted wax enters the mold. So that the first result is to fill a *heated* mold, but it would be filled with *superheated* material; and as the next result does follow, just as in the practice actually carried out by defendant, the heating of the mold to a temperature far above the melting-point of the material, and the elimination of air-bubbles.

According to the Joyce "process," the mold is preheated to a temperature very nearly that of the melting-point of the wax, so that the first result of pouring the melted wax, which is at very little above its melting-point, is to fill a heated mold. But it is not filled with *superheated* material. Consequently, there is no *superheating* of the mold. Superheating, as so often pointed out, is one of the things that distinguishes this process from the Joyce patent. I again call attention to Mr. F. L. Dyer's former testimony, which I have quoted, namely: That the Joyce "process" differs from defendant's in *not* superheating. Also, there is no

direction by Joyce to *maintain* the heat. Consequently air-bubbles are *not* eliminated by Joyce.

To sum up: If defendant's process be modified as suggested, so as to be specifically *different* from the practice as actually carried out by defendant, the modified process would still differ from the Joyce process in the two essential respects in which defendant's actual process differs from the Joyce process. Joyce departs from what I have spoken of as "the common basis" (of the process of Claims 2 and 3 of the Edison patent No. 713,209) in preheating his mold, although Joyce does *not* superheat it. Defendant's actual process and the modification suggested by complainants' counsel, both of them, depart from the aforesaid "common basis" (of Edison) by superheating, and by *maintaining* the heat.

Defendant's counsel offers in evidence Edison patent No. 713,209, dated Nov. 11, 1902, as "Defendant's Exhibit, Edison Patent No. 713,209."

Defendant's counsel has already marked for identification the transcript of record and exhibits in the Connecticut suit, and especially calls attention to the Dyer deposition therein, referred to by the witness Massie.

No re-cross examination.

Signature of witness and certificate of magistrature waived.

Defendant closes its proofs in each of the three cases.

COMPLAINANT'S REBUTTAL PROOF.
 IN THE UNITED STATES CIRCUIT COURT.
 Southern District of West Virginia.

10 NATIONAL PHONOGRAPH Co. }
 vs. } In Equity, on Miller
 AMERICAN GRAPHOPHONE Co. } & Aylsworth Patent
 No. 683,615.

NATIONAL PHONOGRAPH Co. }
 vs. } In Equity, on Ayl-
 AMERICAN GRAPHOPHONE Co. } worth & Miller
 Patent No. 683,676.

20 NEW JESSY PATENT Co. }
 vs. } In Equity, on Joyce
 AMERICAN GRAPHOPHONE Co. } Patent No. 831,568.

30 Further testimony in Rebuttal taken pursuant to
 notice at the office of Frank L. Dyer, Orange, New
 Jersey, March 4, 1908, at 11 A. M., before Alphonse
 Weston, Notary Public of New Jersey, Special Ex-
 aminer by consent.

Present:

FRANK L. DYKE, Esq., and HERBERT H. DYKE,
 on behalf of complainants.

C. A. L. MASSIE, Esq., on behalf of defendant.

DEPOSITION OF MARTIN SHANNON.

40 MARTIN SHANNON, a witness produced on be-
 half of complainants, being duly sworn, deposes and

says in answer to question propounded by Mr. Dyke,
 as follows:

Q. 1. Please state your name, age, residence, and
 occupation? .

A. Martin Shannon; age, 40; reside 17 Bah-
 cock Place, West Orange, N. J.; occupation, fore-
 man of Master Molding Department of the
 National Phonograph Company.

By Mr. Massie:

The informal notice over the telephone
 and the letter which we accepted in lieu
 of the formal notice named Mr. Browne,
 the expert, as the witness to be examined. De-
 fendant's counsel will waive any objection to
 the examination of this witness or any other
 witness produced other than Mr. Browne pro-
 vided that if further time be desired by defend-
 ant for cross-examining such witnesses, the
 same will be granted by complainants.

By Mr. Dyke:

Complainants' counsel will, of course, give
 such reasonable time as may be necessary for
 purposes of cross-examination, granting to
 defendant's counsel the same right he would
 have if advised of the taking of the pre-
 sent testimony by formal notice. Counsel
 for complainants states that it was his purpose
 to proceed this morning with the examination
 of Mr. Browne, but as Mr. Browne is not pre-
 sent and Mr. Massie is, the taking of the pre-
 sent testimony was regarded as an accommoda-
 tion to defendant's counsel.

Q. 2. Mr. Shannon, what is the work on which
 you are engaged as foreman of the Master Molding
 Department?

A. I have charge of the making of the master molds. While I don't have charge of making the molds, I make the masters from the mold.

Q. 3. Please explain how these masters are made from the master molds in your department?

A. I produce three metal parts. This is the core (indicating); it is first heated, after it is hot enough
10 placed upon the core, and the cap (the third piece referred to) is placed on top of the mold, then the three pieces are set in a gas furnace and heated until it is hot enough so that it will shimmer by touch of a wet finger applied to the exterior of the mold. These parts are then taken out of the oven by a wire hook inserted through the opening in the top of the core, then placed on a table and now filled with wax, the temperature of which is 275° F. The wax is poured
20 in with a coffee pot or other vessel having a spout. The filled mold is then taken and chilled by setting it in a tank containing water; the water comes up close to the joint between the mold and the cap. It remains in the water until the wax has congealed so it is safe to take out without the wax running. It is then placed, still upright, in a revolvable chuck. The base is secured in this chuck by means of a thumb screw. Then the cap is first scrapped on the inside with a thin knife which loosens the wax from the cap. Then the cap is taken off, which leaves the wax projecting from the top of the mold and around the top of the core. It (the wax) is then cut off
30 square with the top of the mold by means of a knife, the chuck being rotated during this operation. Then the mold is taken right off of the core, a slight twist may be given. The casting leaves the core and comes up with the mold. Then the mold with the casting therein is placed on a remaning machine, and the inside removed to a tapers; the mold still contain-
40 ing the casting is placed upon a hollow metal shell

which fits the interior of the casting; a water jacket is set upon the outside of the mold, encircling it, and cold water is circulated through the jacket, until the master leaves the mold. The mold is then lifted up, leaving the record on the shell and the record remains there until it is cold. This might be from a half hour to an hour and a half. I have referred to the record in this answer sometimes as the casting and sometimes as the master.

Q. 4. How long have you been foreman of the Master Molding Department?

A. I can't tell exactly, it will be, I believe, sometime in last August I took charge of it, but I worked on it previous to having charge of it.

Q. 5. How long have you been engaged in this work in any capacity?

A. Three years or over.

Q. 6. How long, if you know, has the method which you have described of making molded masters been in use in the department of which you are now foreman?

A. Three years or over.

Direct examination closed.

By Mr. Massie:

x-Q. 7. What is a master record, that is, what is it used for?

A. It is used to make molds from.

x-Q. 8. I understand the practice of the National Phonograph Company is first an original sound-record is made upon the phonograph, as by a hand playing or a singer singing a song; then a mold is made from that original record; then your master records are cast from that first mold; and then further molds are produced upon those master records; and finally your commercial sound-records are made from those second molds. Is that correct?

A. Yes.

x-Q. 9. Have you any idea of the temperature to

which the molds are raised in the gas oven?

A. No, I have not.

x-Q. 10. I understand that you use the wet fin-
ger test and do not employ a thermometer.

A. Yes, sir.

x-Q. 11. How many persons are engaged in the
master molding work?

A. Eight, seven beside myself.

x-Q. 12. How many of these handle the heating
of the mold?

A. Two.

x-Q. 13. Is the wax you employ in making the
master records the same that is used for making the
commercial records you put on sale?

A. I couldn't say.

x-Q. 14. Do you know what the material is that
you call wax?

A. No.

x-Q. 15. Do you, in the conduct of your depart-
ment, have to make requisitions from time to time
for this wax; or does some other department keep
you supplied without any request coming from you?

A. I send a man after it.

x-Q. 16. What do you instruct this man to ask
for, and if you know, what does he ask for?

A. Master wax.

x-Q. 17. And I understand that you do not
know what this wax is?

A. No, sir.

x-Q. 18. Are you at all familiar with the appear-
ance of the wax of the ordinary Edison molded
records on the market?

A. No, I am not, I never take much notice of it.

x-Q. 19. So far as the mere looks go, what dif-
ferences, if any, are there between the master record
made in your department, and the ordinary Edison
molded record on the market?

A. That I don't know, they are a larger record.

The master record is a larger record than the regu-
lar. I mean that the outside is the same, but the
master record has a thicker wall and it has a smooth
tapered bore, there is more wax in it than in the
regular record.

x-Q. 20. I do not care now about the size or
shape of the two articles, but would like to know
about the appearance of the wax of which they are
made. Is there any difference so far as you know,
in the wax of a master record and the wax of a
regular Edison record?

A. Not that I know of.

x-Q. 21. I suppose that the temperature to which
the master wax is raised, namely 375° F., is not
measured by a thermometer every time you pour
wax, but that thermometer readings are taken from
time to time, so as to guide you in the general run
of your operations?

A. Yes, that is right.

x-Q. 22. Do you know about at what tempera-
ture the master wax melts?

A. It will melt at 180°-190°, or probably less
than that.

x-Q. 23. Is there any regular practice in your
department with regard to the number of masters
you make from any particular mold; or do you
have to get particular instructions in regard to
each.

A. I have an order to go by.

x-Q. 24. After you have placed your mold con-
taining the casting within the water, and when
the cooling has proceeded so far that the master
shrinks away from the mold, exactly how do you
remove the mold from the master?

A. We raise the molds straight up.

By Mr. Dykes:

The mold referred to by the witness, com-
prising the three detachable parts described, is

introduced in evidence and marked "Complainant's Exhibit Commercial Joyce Apparatus."

By Mr. Massie:

The exhibit is objected to as irrelevant and immaterial and the designation given it is objected to as misleading, since the same does not appear to be a "commercial" mold, but a mold for master records, and no basis is laid for using in connection with it the name "Joyce."

STIPULATION.

It is stipulated and agreed between counsel that unless otherwise requested in particular cases, every exhibit introduced may remain in possession of counsel introducing it, subject to production upon reasonable request.

Signature and certificate waived.

March 5, 1908.

The witness MARTIN SHANNON, on behalf of complainants, is recalled.

Rd-Q. 25. Mr. Shannon, when you were testifying yesterday, Mr. Massie asked you the following question:

x-Q. 22. "Do you know at about what temperature the master wax melts?"

and you replied to that question:

"It will melt at 180°-190°, or probably less than that."

do you wish to make any correction to that answer?

A. It was 200° that I meant. It will stay at a melted liquid at 200°.

Re-cross examination by Mr. Massie.

Rx-Q. 26. Who called your attention to the fact

that you had made the mistake of saying 180°-190°?

A. That gentleman over here (indicating Mr. Dyke).

Rx-Q. 27. Were you surprised that you had made the mistake, or were you under the impression that your first answer was correct?

A. I supposed it was 200° that I said, instead of 190°.

Rx-Q. 28. Have you, since you gave your testimony yesterday, made any thermometer readings of the temperature at which this wax becomes liquid?

A. None but with my regular wax as I work daily.

Rx-Q. 29. Have you, either yesterday or today, observed by the thermometer the temperature at which your regular wax becomes liquid?

A. Nothing but merely in the kettle that I used.

x-Q. 30. Is that a fact that neither yesterday or today, in the kettle that you used, you have taken a thermometer reading to find out about what temperature your wax first becomes liquid?

A. No, sir.

x-Q. 31. Have you, either yesterday or today, found out by a thermometer the temperature at which your wax becomes solid?

A. No, sir.

Rx-Q. 32. When Mr. Dyke, here present, spoke to you about the mistake in your answer, did you not suggest that you should inquire of Mr. Dodd as to the temperature?

A. Yes, sir.

Rx-Q. 33. Why was this, did you not think you knew it yourself already?

A. Well, the way I understood, or the way the question was put by you, what the heat would it take to melt solid wax.

Rx-Q. 34. What is the heat that will take to melt the solid wax?

A. I could not say.

Rx-Q. 35. When I asked you yesterday, do you know about at what temperature the master wax melts, you thought I was asking how much heat it would take to melt solid wax?

A. Yes, sir.

Rx-Q. 36. And that is the question you undertook to answer yesterday?

A. Yes, sir.

Rx-Q. 37. And as a matter of fact you cannot say how much heat it will take?

A. To melt solid wax? I don't know anything about it.

Rx-Q. 38. What do you mean by solid wax?

A. Why, cake wax.

Rx-Q. 39. You mean the same wax that you use in molding masters, except that it is not broken up into small lumps, but is in a solid cake?

A. Well you must break it up in lumps to melt it; it is all solid wax.

Rx-Q. 40. If you have a batch of your master wax, at the temperature at which you use it in filling your molds and then let it cool, will it be liquid when it is cooled down to 280° F?

A. I couldn't tell you.

Rx-Q. 41. Would this melted wax become solid when it got down to 300° F?

A. Which, on the thermometer? (Yes.) No, it would not be solid, it would be melted.

Rx-Q. 42. I mean, you have some of your master wax heated way up to, say 375° F.; you then let it stand or cool it until its temperature is 300° F.; will it then be solid or liquid?

A. Liquid.

Rx-Q. 43. But as to 280° you cannot say?

A. No, sir.

Replied by Mr. Dyke:

Rd-Q. 44. Mr. Shannon, when I had you come

over here this morning, did I not tell you that you had testified yesterday that the master wax melts at 180° to 190°, and ask you if that statement was correct?

Objected to as leading.

A. Yes, sir.

Rd-Q. 45. And when you stated you would see Mr. Dahl about it, did I not instruct you to go and find out for yourself?

A. Yes, sir.

Rd-Q. 46. Did I not instruct you to go and find out for yourself?

A. Yes.

Rd-Q. 47. But you did not do so?

A. No, because I knew 290° was right.

Rd-Q. 48. How do you melt your wax?

A. Melt it with a gas fire.

Rd-Q. 49. Do you fill the vessel with cold wax and then apply heat and melt this wax?

A. Yes, sir, it has to be done that way.

Rd-Q. 50. When you do so, at what temperature does it melt?

A. At 290° it will melt, the wax will stay at liquid at 290° on the thermometer.

Rd-Q. 51. You have, yourself, melted wax in this way, and taken its melting temperature with a thermometer?

A. Yes, sir, but not very many times; it is always prepared for us by the watchman.

Rd-Q. 52. When you did melt the wax in this way, what the thermometer reading when it melted?

A. At 290° the most of it is melted, but there may be some hard lumps in it.

Rd-Q. 53. Is it your usual custom to melt your master wax without any previously melted wax in the kettle?

A. We clean it out once a week and start with

fresh cold stuff, the rest of the time we add fresh wax in lumps to that already melted in the tank.

Adjourned until March 6, at 10 A. M.

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IN THE CIRCUIT COURT OF THE UNITED STATES.

Southern District of West Va.

NATIONAL PHONOGRAPH CO.	} In Equity, on Miller & Aylsworth Patent No. 688,615.	
vs.		
AMERICAN GRAPHOPHONE CO.		10
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NATIONAL PHONOGRAPH CO.	} In Equity, on Aylsworth & Miller Patent No. 688,676.	
vs.		
AMERICAN GRAPHOPHONE CO.		
<hr/>		
NEW JERSEY PATENT CO.	} In Equity, on Joyce Patent No. 881,668.	
vs.		
AMERICAN GRAPHOPHONE CO.		20

Complainant's Testimony in Rebuttal taken pursuant to notice at the office of A. M. and E. H. Parkins, Room 516, Washington Loan & Trust Building, Washington, D. C., on Monday, February 24, 1908, at 11 A. M., before A. M. Parkins, Notary Public in and for the District of Columbia, and Special Examiner by consent of counsel.

Present:

HERBERT H. DYKE, on behalf of complainant.
S. T. CAMERON, on behalf of defendant.

DEPOSITION OF MAURICE JOYCE.

MAURICE JOYCE, a witness produced on behalf of complainants, being first duly sworn, deposes and says in answer to interrogatories by Mr. Dyke, as follows, to wit:

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Question 1. Please state your name, age, residence, and occupation?

A. Maurice Joyce; age, 70 years; occupation, photo-engraver; residence, 922 M Street, N. W., Washington, D. C.

Q. 2. Are you the same Maurice Joyce to whom United States Patent No. 831,608, for Method of Duplicating Phonograms, was granted on Sept. 25, 1906, upon an application filed Oct. 13, 1897, and which is the patent in suit in the case of New Jersey Patent Co. vs. American Graphophone Co.?

A. I am.

Q. 3. Was, or was not, the application for this patent founded upon actual work performed by you?

By Mr. Cameron:

Question objected to as leading.

By Mr. Dyke:

Question reformed as follows:

Q. 4. How did you come to make this application for patent?

A. Does it mean why I did it, or how I come to do it. I don't understand it.

Q. 5. I mean to inquire, Mr. Joyce, simply what led you to the filing of this application.

A. What led me to file the application; I made the cylinders and they were successful and I filed an application for patent.

Q. 6. When, to the best of your recollection, did you first make these cylinders? Is there anything in your recollection by which you can fix this time?

A. To the best of my knowledge and belief it was some time between 1894 and the time of filing the application. I made a change of my business in May, 1894; now I may have commenced in 1894 and probably not until 1895 to experiment.

Q. 7. You are reasonably certain are you, then, that you did this work during 1895?

By Mr. Cameron:

Question objected to as leading.

A. To the best of my knowledge and belief I believe I started in 1895.

Q. 8. Did you produce any of the cylinders or phonograms during 1895, so far as you can recollect?

By Mr. Cameron:

Question objected to as leading and notice is given that if counsel persists in asking leading questions of the witness, motion will be made to strike the questions and answers from the record.

A. I believe I did.

Q. 9. Explain the work which you did in as brief terms as possible, beginning with its earliest form and tracing its development?

A. I first made the copper mold, then after making the mold I made the records.

Q. 10. How did you make the mold?

A. By the electrolytic process.

Q. 11. Please explain this process?

A. I got a wax cylinder and deposited copper upon it.

Q. 12. How were you able to deposit copper upon a wax cylinder?

A. By suspending the cylinder in an electrolytic bath; that is, they call it a bath.

Q. 13. Was this cylinder when suspended in a bath in the original form in which you got or purchased it?

A. I placed it in a suitable case or mold to suspend it in the copper solution.

Q. 14. Was the copper deposited immediately upon the wax itself?

By Mr. Cameron:

Question objected to as leading.

A. I coated the wax cylinder with plumbago.

Q. 15. Having formed your mold, explain the next step of making the wax cylinder, confining yourself to your earliest work?

10 A. After completing the mold I poured melted wax into the mold.

Q. 16. How did you arrange the mold to receive the wax?

A. I prepared a metal base to hold the mold.

Q. 17. Did the two pieces, the mold and base, constitute the whole of your apparatus?

A. I inserted a core within the mold.

Q. 18. Have you now in your possession any specimens of the apparatus which you used?

20 A. I have.

Q. 19. Can you produce any such specimens?

A. I have in my possession several molds and herewith produce them, together with the bases and one of the cores.

Q. 20. Were all the molds which you produced made at the same time?

A. They were made at different times from different record cylinders.

30 By Mr. Dyke:

The molds, bases and core produced by the witness are introduced in evidence and marked for identification, respectively: "Joyce Mold No. 1," "Joyce Mold No. 2," "Joyce Mold No. 3," "Joyce Base No. 1," and "Joyce Base No. 2," and "Joyce Core."

40 Q. 21. Of the Molds Nos. 1, 2 and 3, was either of these molds made at a different time from the other?

By Mr. Cameron:

Question objected to as leading. The witness should be asked when the molds under consideration were made.

By Mr. Dyke:

Complainants' counsel states that the question was asked in the form given to it simply to ascertain the relative and not the exact time of making the molds.

By Mr. Cameron:

Counsel for defendant insists upon the objection and protests against the form of the question as it now appears that the same was intentionally leading.

A. They were.

Q. 22. Which was made first?

A. The mold marked "1" was made first.

Q. 23. What, if any, difference is there between this mold and those made later?

A. Mold 1 is a blank; the inside is blank. Molds 2 and 3 contain a record on the inside of each.

Q. 24. Mention any other differences which you may note?

A. Well, I don't know how to answer that.

Q. 25. Please compare the upper portion of Mold No. 1 with the similar portions of Molds Nos. 2 and 3?

A. Mold No. 1 has a slightly flaring mouth. No. 2 and No. 3 have a larger flare mouth.

Q. 26. What is the purpose of this flaring mouth?

A. To retain the melted wax.

Q. 27. When, as nearly as you can recollect, did you make Molds 1, 2 and 3?

A. I can't give the exact date, but it was sometime between the early part of 1895 and the date of filing the application.

Q. 28. How long, if you can remember, did you make Molds 2 and 3, or other molds similar to them, before filing the application?

By Mr. Cameron:

Question objected to until it appears of record that "other molds similar to them have been made" or were made by the witness prior to filing the application.

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Q. 29. Embody with the answer to the previous question an answer to the following: Are Molds 2 and 3 all of the molds of this kind which you made?

By Mr. Cameron:

Question objected to as leading.

A. I made molds at different times. I made from ten to a dozen or more at different times. I was making molds for over a year at different times; a year or more at different times before filing the application.

Q. 30. Please assemble the mold, base and core as you used them, and explain how you made the record cylinders?

A. I place the core in the base, the bottom of the core fitting in the central opening of the base. I then place the mold around the core with the bottom of the mold fitting the slight cup-like depression in the base. I took a saucepan and put cylinder wax and melted it. I put the mold into a gas oven, turned on the gas and heated the mold in the gas oven. When the mold was heated and in proper condition, I took the melted wax and poured it into the mold between the core and the mold. After the wax had cooled I removed the core and then removed the cylinder from the mold.

Q. 31. Had you any way of telling how hot you heated the mold?

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A. As hot as I could get it. I sometimes put the mold and the saucepan containing the wax into the oven and heated them both together. After the wax was sufficiently heated I took them both out and poured the wax into the mold.

Q. 32. What do you mean by sufficiently melted?

A. When it was melted as hot as I could get it, so it would flow into the mold.

Q. 33. Did you always heat the mold?

A. Always.

Q. 34. I am referring to all your experiments from the start to the finish?

A. When I first started I did not heat the mold.

Q. 35. What kind of results did you get with the cold mold?

A. I got a defective or imperfect record.

Q. 36. Explain the nature of the imperfections of the record so obtained?

A. The records so obtained were defective with blisters and bubbles on the face of the cylinder.

Q. 37. Did the records made with the hot molds have these imperfections?

By Mr. Cameron:

Question objected to as leading.

A. The first records I made had some.

Q. 38. How was it with the rest?

A. I concluded the trouble was that the mold was not sufficiently hot.

Q. 39. What did you then do?

A. I heated my mold still hotter. After the first were imperfect I got the mold and wax the same temperature by putting them both into the oven and heating them together. The result was a perfect cylinder. I discovered that by having the wax and the mold the same temperature there was harmony between the wax and the mold and the result was a perfect cylinder.

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Q. 40. Explain about the congealing of this cylinder and when it began?

A. I never timed the congealing, but it congealed slowly.

Q. 41. Please explain further and state when you first noticed the congealing after pouring the wax under the conditions which you have named?

A. A few minutes after pouring the wax it congealed on the edge of the lip of the mold and on the upper part of the core, and then there was a slight shrinkage of the surplus wax within the lip. Then sometimes I cooled the inside core.

Q. 42. Who, if any one, witnessed the work which you did with these molds, and which you have just described?

A. My son, Maurice E. Joyce.

Q. 43. Having made these record cylinders, what did you do with them?

A. I put them on a graphophone and tested them.

Q. 44. With what result?

A. Those that were satisfactory I retained, and if I found any one not satisfactory I threw it aside.

Q. 45. Did you manufacture successfully any considerable number of molded record cylinders in this way?

By Mr. Cameron:

Question objected to as leading.

A. I should judge I made several dozen of them.

Q. 46. Did you do all of the testing of the records yourself?

By Mr. Cameron:

Same objection.

A. When I first started I had no graphophone. I took the records, several of them, to the Columbia Phonograph Company, and had them tested on their machines in their shops on Pennsylvania Avenue.

Q. 47. By whom?

A. By some of the employees. The last one I had tested was tested by their manager.

Q. 48. Do you know his name?

A. I forget his name; but he pronounced them perfect records.

Q. 49. Did you have any conversation with him respecting the records?

A. I am under the impression he told me he would like to submit that record to Mr. Easton.

Q. 50. What did you say to that?

A. I objected at the time. I told him I did not care about submitting it at that time.

Q. 51. Were there any other persons to whom you talked?

A. Yes; I borrowed a graphophone from Stillson Hutchins. Before borrowing the graphophone from Stillson Hutchins I had some records tested on his graphophone. I talked with several persons as to my experimental work; as to what I was working on.

Q. 52. Any one else connected with the Columbia Phonograph Company?

By Mr. Cameron:

The question objected to as leading.

A. Oh, yes; with several of the salesmen I was acquainted with.

I used to buy wax from them, and they knew I was experimenting in that direction.

Q. 53. Did you have any conversation with any of the officials of the Columbia Phonograph Company?

By Mr. Cameron:

Counsel for defendant renews his objection to the leading character of these questions and specifically objects to the last question as grossly leading in character and renews his

notice that at the proper time defendant will move to strike from the record all of the questions and answers open to this objection.

A. On one occasion the Washington manager of the Columbia Phonograph Company called upon me, and introduced a gentleman whom he represented as being vice-president of the New York Phonograph Company. Both of them asked me how I made these records. I refused to tell them how. I told them that after the patent was issued they would probably know all about it.

Q. 54. What do you mean by the New York Phonograph Company in your previous answer?

A. I mean the New York office of the Columbia Phonograph Company. In other words, he told me that this man was vice-president of the Columbia Phonograph Company. I concluded the man was from New York.

Q. 55. What was the material which you used for molding the record?

A. I bought the material from the Columbia Graphophone Company; old broken cylinders.

Q. 56. Was what you have related the whole of what passed between you and the Columbia Phonograph Company?

By Mr. Cameron:

Question objected to as leading.

A. When I first started Mr. Easton was manager of the Washington Columbia Phonograph Company. I spoke to him and told him I had a method of duplicating cylinders. Now, I think he seemed to take an interest in the thing, and a little while after that he left for New York. At that time the Columbia Company had a law suit pending with some man, and Mr. Easton asked me if I could duplicate some of the flat wax disks. Mr. Easton afterward went to New York and I lost sight of him.

RECESS.

Q. 57. Mr. Joyce, I hand you two papers and ask you to explain what these papers are and what you know about the matters treated of therein?

A. The paper signed "Robert Fletcher Rogers" was in reply to a letter I wrote him, and acknowledges the receipt of a cylinder I sent him. The letter is as follows:

ROBERT FLETCHER ROGERS,
Attorney at Law and
Counsellor in Patent Causes.
45 Broadway,
Cable Address: BOURNOCROSS.

New York, July 5th, 1898.

Maurice Joyce, Esq.,
No. 414 11th Street, N. W.,
Washington, D. C.

Dear Sir:—

I beg to acknowledge receipt of your favor of 29th ultimo, which should have been acknowledged before, as well as of a graphophone cylinder received by express. I have been unable to exhibit this as yet to the Graphophone Company for the reason that Mr. Devine and others have been absent from the city. I shall attend to the matter with all possible speed and communicate with you according to instructions.

Very truly yours,
(Signed) ROBERT FLETCHER ROGERS.

The other paper is a letter signed by Mr. Easton is one forwarded to me by Mr. Rogers. This letter is as follows:

Maurice Joyce.

EXECUTIVE OFFICES
COLUMBIA PHONOGRAPH COMPANY
Sole Sales Agent for the American
Graphophone Company.

Bowling Green Offices: 5, 7, 9 & 11 Broadway,
New York City, July 9th, 1898.

Mr. R. F. Rogers,
No. 43 Broadway,
New York, N. Y.

My Dear Sir:—

We were interested in the record submitted by you to-day as coming from Mr. Joyce. Such records would not be commercially saleable, because of harshness and a tendency to run blind; but if made from a permanent master capable of reticement and improvement and of very cheap and quick manufacture, Mr. Joyce would seem to be on the right track, and should be encouraged to proceed with his work.

Yours truly,

(Signed) E. D. EASTON,
President.

Dictated to and transcribed
from the new
GRAPHOPHON.

At the suggestion of Mr. Hutchins, who was interested in the thing, I forwarded this cylinder to Mr. Rogers, in reply to his request for a cylinder. Mr. Rogers wanted to submit it to the Columbia Graphophone Company of New York. I received these letters from Mr. Rogers.

By Mr. Dyke:

The letters referred to and spread at length on the record in the preceding answer are introduced in evidence and marked "Complainants' Exhibit, Robert Fletcher Rogers' Letter

Maurice Joyce.

to Joyce, July 5, 1898," and "Complainants' Exhibit, Easton's Letter to Rogers, July 9, 1898."

By Mr. Cameron:

The letters offered in evidence are objected to at this time since the authenticity of the same has not been properly proved. They are further objected to as immaterial and irrelevant. They are further objected to as only embodying a fragment of the correspondence of which they purport to be a part, and the remaining parts of this correspondence are or were in the possession of the witness and remain unaccounted for.

STIPULATION.

It is hereby stipulated between the respective parties to this suit that the three molds, two boxes, the core, and the two letters offered in evidence in connection with the testimony of this witness may remain in the custody of the complainants, subject to production at any time upon reasonable notice.

Q. 58. Have you any further portions of this correspondence in your possession, to your knowledge?

A. I could not find any.

Q. 59. Did you endeavor to find it?

A. Yes. I searched for it, and was unable to find any.

Q. 60. How did you forward the cylinder to Mr. Rogers?

A. By express.

Q. 61. You wrote Mr. Rogers, I presume?

A. Yes.

Q. 62. Did you keep a copy of the letter?

A. No.

Q. 63. How did you come to preserve the two letters which have been introduced?

A. I filed them with some other papers, and I found them when I searched for them.

Q. 64. How was it that you came to preserve these particular letters and apparently did not preserve the remainder of the correspondence?

A. I did not make a copy of any of my letters forwarded to Mr. Rogers.

Q. 65. Did you ever get the cylinder back from Mr. Rogers?

A. No.

Q. 66. Where is that cylinder now if you know? A. I believe that Mr. Rogers still has it in his possession.

Direct examination closed.

Cross-examination of witness by Mr. Cameron:

x-Q. 67. Mr. Joyce, I call your attention to the mold and base No. 1, which has no record in reverse on the interior of the mold. I take the core offered here in evidence and insert it inside of the cylinder with its smaller end downward, and ask you if when you first tried to mold wax in this cylinder you used it in the condition I now show it with the core in position within the mold?

A. I did.

x-Q. 68. Please tell me the earliest date to which you are willing to swear when you used this mold No. 1 in this position?

A. To the best of my knowledge and belief it was from eighteen months to two years prior to the filing of the application. I think I would be justified in swearing to two years.

x-Q. 69. I have no doubt, Mr. Joyce, of your entire candor, but this is a matter that occurred a good many years ago, and I again wish to ask you as to the earliest date to which you are willing to make oath that you used this device; and in answer-

ing the question please tell me how you fix the date, if you can positively fix on any date?

A. In May, 1894, I made a change in my business, and it was some time after that change that I commenced on this record or cylinder.

x-Q. 70. Am I to understand from your answers that you know it was after May, 1894, and prior to Oct. 13, 1897, but that you cannot undertake to fix the date any nearer than that?

By Mr. Dykes:

Question objected to as without foundation in the testimony which this witness has already given, the witness having just testified that he used Mold No. 1 in the manner described at at least from eighteen to twenty-four months prior to the filing of his application. This is evidently an effort on the part of defendant's counsel to make an admission entirely in conflict with what witness has heretofore stated, since defendant's counsel could not have understood from the witness' statements that the witness cannot undertake to fix any date any nearer than May, 1894, or October, 1897.

By Mr. Cameron:

Defendant's counsel calls attention to the fact that the statements contained in the preceding objection by complainant's counsel were not in accord with the facts. The witness has not testified that he used the Mold No. 1 at least from eighteen to twenty-four months prior to the filing of his application, but merely has expressed it as his "belief" that he so used it. Question 69 called for the earliest date to which he was willing to make oath, and in answer thereto the witness states that he changed his business in 1894 and that it was some time after that change. Defendant's counsel insists that the question is not only a proper one, but one that was designed to be perfectly fair to the witness, who is certainly

able to state whether or not he can fix the date any nearer than he has done, and the question is insisted upon.

By Mr. Dyke:

Complainants' counsel states that if the question asked be construed to be merely the query "Whether or not he can fix the date any nearer than he has done," that it is certainly a proper question, and that he has no objection thereto; but Complainants' counsel must insist upon his objection to the question as originally put.

By Mr. Cameron:

Defendant's counsel replies that the question as it stands on the record is the question to which he demands an answer to from the witness.

By Mr. Dyke:

Former objection renewed.

A. My memory is had on dates; it never was good on dates. I don't know that I can fix the exact date. The fact is that I experimented, and it was sometimes over a week and sometimes over a month before I took it up again. I know I was some time working on the thing. I feel satisfied it was over a year before I made application. I find it right hard to go back and fix upon anything that would remind me of the earliest time that I started the thing, so as to swear to the date.

x-Q. 71. Did you purchase all of the wax that you used in these experiments from the Columbia Phonograph Company?

A. I purchased some and the young man there gave me some broken cylinders; threw them in.

x-Q. 72. Did you purchase the first wax which you used from the Columbia Phonograph Company?

A. I got it; I don't know whether I purchased it or not. I got some and purchased some. The wax that I got was old broken records; all the wax that I used was from Columbia records.

x-Q. 72. Are you willing to swear that the first wax you obtained from the Columbia Phonograph Co. was not obtained in the Spring of 1897?

A. I cannot say.

x-Q. 73. I observe that the core which you say you employed has a smooth exterior surface. I call your attention to a picture showing a mold with a smooth here mounted on a base and having an interior tapering core which core, however, has a spiral groove formed thereon; and ask you if, with the exception of the spiral groove, it is not like the mold No. 1 with the core inserted therein?

A. I would say that this mold is in more than one piece. The top is separate from the body part.

x-Q. 74. That is the only substantial difference outside of the fact that the core has a spiral groove on it, is it not?

A. It is different here; the base is different, and the upper end is different. That I consider an additional piece.

By Mr. Dyke:

The foregoing question, and any examination along this general line, is objected to for the reason that the witness has not qualified as an expert skilled in the comparison of one patent with another, or as an expert skilled in the reading of drawings. This witness was offered purely as a fact witness, and this testimony being out of the scope of the direct examination is objected to as improper cross-examination.

x-Q. 75. At the time you began your experiments did you know it was old in the talking-machine art?

to make a blank cylinder by pouring the molten wax into a cylinder having a smooth interior surface, which cylinder is mounted on a base supporting a tapering core within the cylinder, and having a flaring mouth part to readily conduct the molten wax into the space between the core and the interior face of the cylinder?

10 By Mr. Dyke:

Counsel for complainants feels that he must protest most strongly against this improper effort to transform a witness simply to facts as to what his own practice has been into an expert witness who shall inform the court what the art was prior to the doings of this witness. The question is objected to as incompetent, there being absolutely nothing on the record to show that this witness is qualified to answer such a question; and it is further objected to on the ground that it is not at all within the scope of a proper cross-examination. Defendant's counsel is notified that if he persists in this line of questioning he will have made the witness his own.

20 By Mr. Cameron:

Defendant's counsel replies that in his direct examination inquiry was made of the witness as to how he came to make the application and when he first made the cylinder in question. The question objected to by complainants' counsel is one calling for a fact entirely within the knowledge of the witness, viz., as to whether he knew at the time he says he made cylinder No. 1 that it was old to make a cylinder of the kind described in the question. Defendant's counsel desires to make the witness his own and insists upon the question.

30 By Mr. Dyke:

40 In view of the foregoing statement by defendant's counsel, further objection is made on the

ground that the question is entirely immaterial, what this witness did being precisely the same thing entirely irrespective of any information he may have as to the prior state of the art. Defendant's counsel is asking a question which can only properly be asked of an expert witness introduced in his behalf.

A. I did not.

x-Q. 76. When you first began your experiments I understand you to say that you employed a cold mold, is that correct? 10

A. Yes.

x-Q. 77. And subsequently you adopted the practice of heating the mold, did you not?

A. I did.

x-Q. 78. Please tell us what it was that led you to try the use of a hot mold instead of a cold mold?

A. The results from the cold mold were not satisfactory. 20

x-Q. 79. Well, why did you then try a hot mold? What led you to do this?

A. To see if I could get better results.

x-Q. 80. Had you learned that it was old in the casting art in casting certain articles of wax to employ a hot mold?

A. I had never seen it done.

By Mr. Cameron: 30

Question repeated.

By Mr. Dyke:

Same objection as to x-Q. 75. Complainants' counsel must insist that in the direct examination the witness was asked only what he had done and not what information he had previously obtained. The question is clearly without the scope of the direct examination. 40

A. I had read about casting caniles.

x-Q. 81. In hot molds?

A. I believe the molds were hot or warm.

x-Q. 82. Did you not say to me a few moments ago that you read in an encyclopedia about casting caniles in hot molds?

A. Either hot or warm; I can't swear that they were hot; they were either hot or warm.

10 x-Q. 83. And this led you to the casting of your wax in hot molds, did it not?

A. I had cast a wax cylinder in a copper mold years previous to that patent (indicating Edison patent No. 414,761).

x-Q. 84. You are an electrotypist, are you not?

A. I am an electrotypist, an engraver, photo engraver, stereotyper, and a printer.

20 x-Q. 85. And your business made you more or less familiar with the general art of casting, did it not?

A. I am familiar with the art of casting stereotypes.

x-Q. 86. And you knew that it was common practice to cast various materials in a hot mold, did you not?

A. I knew it was common practice to cast stereotype plates in a hot mold.

30 x-Q. 87. Your invention as I understand it consists in casting fused wax-like material into a hot mold, the wax-like material and the mold being of substantially the same temperature, cooling the mold and contents so as to cause the material to shrink away from the surface of the mold, and then removing the casting, does it not?

By Mr. Dyke:

40 Complaintants' counsel again insists that this witness was produced to testify to what he had

done and that the witness is not called upon to define his invention. The witness is notified that his invention is defined in the claims of his patent and he is instructed that he need not answer this question unless he is ordered to do so by the Court, upon proper application.

By Mr. Cameron:

The question is insisted upon.

By Mr. Dyke:

It is further objected that counsel for defendant in framing this question has included only a portion of one of the claims of the patent, as defining the invention, when as a matter of law the entire claim is necessary to define any invention.

A. I refuse to answer this question. The specification is sufficient.

x-Q. 88. Did you make this invention set out in the specification?

A. I did.

x-Q. 89. Did you employ a hot mold?

A. I did.

x-Q. 90. Did you cast in said mold fused wax-like material?

A. I did.

x-Q. 91. Was said material at substantially the same temperature as the mold?

30 A. The mold and material were both inserted into a gas oven. They were kept there until the wax was melted and were taken out and were both of the same temperature to the best of my judgment.

x-Q. 92. Were the mold and contents cooled to cause the material to shrink away from the surface of the mold?

40 A. I sometimes cooled the mold and sometimes set the mold aside to cool of itself.

x-Q. 93. And did this cause the material to shrink away from the surface of the mold?

A. The cooling did.

x-Q. 94. Was the result any different when you employed a hot mold from what it was when you employed a cold mold?

A. The results were different.

x-Q. 95. You say you cast the record by pouring the molten wax into the hot mold, then cooling the mold to cause the material to shrink away from the mold. What do you mean by "casting"?

A. It is hard for me to define "casting" in the absence of a dictionary.

x-Q. 96. I did not ask you to define "casting" but what you mean by casting?

A. Now in stereotyping we pour the metal into the mold, we call that "casting;" the result from that we call the "cast." I would call pouring this wax into this mold "casting," and I would call the resulting cylinder a "cast."

x-Q. 97. As a practical operation how would pouring molten wax into a hot mold differ in the result obtained from dipping a cold mold into the hot wax and then removing it before the hot wax which had congealed on the cold mold had melted?

By Mr. Dyke:

This question is without foundation in the direct examination of this witness, it not appearing that the witness has any information about dipping a cold mold into molten wax and removing it therefrom before the hot wax which had congealed on the mold had melted. The question is objected to as incompetent and as not within the scope of the cross-examination.

A. I don't know, never having seen the operation last-named.

x-Q. 98. You stated, I believe, that when you undertook to cast a record in a cold mold the resulting record was defective by reason of what you termed "shiners," and "bubbles." Will you please tell us what you meant by bubbles on the cast record?

A. I would call them small indentations and some larger ones. When you pour hot wax into that cold surface it shrinks away from it and does not run sharp, and does not run into the undulations of the record groove. In other words, it does not run "home."

x-Q. 99. Then by "bubbles" you meant indentations, is that correct?

A. Yes, indentations.

x-Q. 100. And I presume you meant that these indentations were caused by bubbles? Is that right?

A. Yes, that is right. They are caused by the cold air in the mold.

x-Q. 101. You say that when you first brought this matter of your cast records to the attention of the manager of the Columbia Phonograph Co. in Washington he pronounced them good records?

A. Yes.

x-Q. 102. Was that before or after you filed your application?

A. I think it was after.

x-Q. 103. How long after this was it that the gentleman who was introduced to you as the vice-president of the Columbia Phonograph Company of New York visited you?

A. I cannot say.

x-Q. 104. Was it before or after you sent, as you allege, a record to Mr. Rogers in New York?

A. I think it was before, but I am not certain.

x-Q. 105. It is stated in your patent that the

heating of the mold slightly expands it. Was this the object in heating the mold?

A. The object was to expand it and at the same time to enable the wax to run sharp into the lines of the mold.

x-Q. 106. How did heating the mold cause the wax to run sharp into the lines?

A. Melted wax will run wherever you pour it provided the surface against which you pour it is warm or hot so as not to chill it. For instance, you can take a piece of stereotype metal and draw a series of lines in that metal and if the wax is warm it will take up all the fine lines, if the plate and wax is warm. If you pour the wax onto a cold plate the lines will not run sharp.

x-Q. 107. Then you think you could not get a sharp impression or casting if the molten wax were brought in contact with a cold mold?

A. I believe not, the wax is very sensitive to cold, particularly.

x-Q. 108. As I understand you, you found this to be true when you undertook to cast a record cylinder into a cold mold, did you not?

A. I did.

x-Q. 109. And the invention which you finally sought to patent therefore put forward as one of its characteristics that the mold must be a hot mold, did it not?

A. The mold in my judgment must be a hot mold in order to get good results, or a good cast.

x-Q. 110. And that is the reason why you emphasized in the description which you gave of your invention, when you drew your patent application, that the mold must be a hot mold, was it not?

A. Yes.

x-Q. 111. And you would regard a process of casting a record which brought a cold mold into con-

tact with the molten wax as a different process from that of your invention, would you not?

A. That depends upon the composition of the mold; further I think a metal mold, unless heated, always carries a chill with it unless heated in some manner.

x-Q. 112. Quite right. But you would regard a process of casting a record which brought the molten wax into contact with a cold mold as different from your invention, would you not?

A. Well, I am not sufficiently expert to define that. I can only explain as far as I went with the process.

x-Q. 113. Did your invention include the use of a cold mold?

By Mr. Dyke:

The question is objected to as defendant's counsel is again endeavoring to have the witness define what his invention was. There is no objection to the witness answering questions as to what he did, but he has not qualified or shown in any way that he is competent to define what is an invention and what is not an invention.

A. The specifications and claims say what it is. In answer to that I should say that the invention is whatever they allow you in the claim.

Adjourned to meet at eleven A. M., Tuesday,

February 25, 1908.

WASHINGTON, D. C., Feb. 25, 1908.

Met pursuant to adjournment.

Present: Parties as before.

Cross-examination of Mr. Maurice Joyce continued.

x-Q. 114. When you first set out with these experiments, your object was to produce molded duplicates of the commercial wax sound-records, was it not?

A. My object was to duplicate records.

x-Q. 115. And did you know of any records other than the commercial wax sound-records?

A. I bought records from the Columbia Phonograph Company which they told me were duplicate records.

By Mr. Cameron:

Question repeated.

A. I knew of no records except those I purchased.

x-Q. 116. And those were the cylindrical records made of material which you have been referring to in the testimony as of wax, were they not?

A. I believe so.

x-Q. 117. And it was your object when you first started out to see if you could not mold duplicates of these records, was it not?

A. My object was to duplicate those records.

x-Q. 118. By molding or casting?

A. By casting in a mold.

x-Q. 119. And the first mold you made was one that did not have any record lines on the interior of the mold, was it not; in other words, it was the smooth bore mold No. 1 which you have shown us?

A. This, I believe, was the first mold I made to cast a cylinder.

x-Q. 120. Did you expect to get a duplicate record from a smooth bored mold?

A. I did not.

x-Q. 121. Then why did you use such a mold?

A. I wanted to see if the cast would deliver from the mold; that is, I wanted to see if the graphophone wax would deliver.

x-Q. 122. In other words you wanted to learn whether the wax would contract sufficiently to permit the cast to be taken out of the mold?

A. I did.

x-Q. 123. As a matter of fact, did you know at that time that it had been old for over forty years to cast wax into a smooth bored mold and, when the wax had been cooled, the casting was then readily withdrawn from the mold?

By Mr. Dyke:

Same objection as to x-Q. 75.

A. I did not at the time I made this mold.

x-Q. 124. You subsequently used a mold, I understand, that had a record in reverse on the interior of the mold, did you not?

A. I did.

x-Q. 125. And later on in your experiments you heated this mold so that it was at about the temperature of molten wax and after the mold was heated and the wax melted you poured the melted wax into the mold, did you not?

A. I did.

x-Q. 126. And you then chilled the mold and its contents and then withdrew the molded record from the mold, did you not?

A. I did.

x-Q. 127. As a matter of fact did you know, at the time you allege you did this, that it had been old for over thirty years to heat a mold and melt wax, heat the mold being at approximately the same temperature as the molten wax, and then pour the melted wax into the heated mold, then chill the mold and contents, and withdraw the cast wax from the mold?

By Mr. Dyke:

Same objection as to x-Q. 75. This question is without the scope of the direct examination.

A. Not at the time I made these casts.
 x-Q. 128. I understand you to say you are a printer?

A. I am.
 x-Q. 129. I suppose you know then what a printer'sinking roll is?

A. I do.
 x-Q. 130. At the time you were making these experiments, did you know, as a matter of fact, that it was common and well-known in the art in making printers' rolls to pour the molten material for the rolls into a previously heated mold, then chill the mold and contents and after chilling to withdraw the cast roll from the mold?

By Mr. Dyke:

The objections already made to questions calling for the knowledge of the witnesses at the time of his work in making record cylinders are repeated as to this question.

A. I know it was common to pour printers' roll composition into cold molds. I never saw the composition poured into a heated mold. The composition for printers' rolls does not shrink in the same manner that wax does, and hence it is not necessary to heat the molds, and the mold is not cooled in order to withdraw the roll from the mold.

x-Q. 131. In practicing your invention after you finally got it completed, you prepared a tubular mold having the record in reverse on its interior, did you not?

A. I made a mold upon the record.
 x-Q. 132. And this mold which you made was made by electro-deposition of copper on the record?

A. It was.
 x-Q. 133. And it had the record in reverse on its interior, did it not?
 A. Yes.

x-Q. 134. You then introduced the molten material into this mold around the core, did you not?

A. I did.
 x-Q. 135. You then caused the material to set, did you not?

A. I did.
 x-Q. 136. And also to contract?

A. The material contracted in setting.
 x-Q. 137. Now, let us understand each other: When the material begins to congeal and finally assumes a solid state while yet quite soft, it has set, has it not?

A. Well, now, I scarcely know how to answer that question. The material is within the mold and I can't tell the condition of it just then.

x-Q. 138. It is not fluid, is it?

A. It is not fluid, after it congeals, naturally.
 x-Q. 139. Each particle of the material then is set or fixed in approximately the position which it will occupy in the finished casting, is it not?

A. I think that is a technical question for me to answer.

x-Q. 140. After you made your mold with the record in reverse in its bore and poured the molten material into the mold around the core, you permitted it to first pass from the fluid to the congealed or semi-solid state, did you not?

A. I permitted it to pass into the solid state within the mold.

x-Q. 141. If you take one of these finished wax records and subject it to any material pressure, it would break, would it not?

A. I have broken wax records pushing them upon the holder in the graphophone; they have dropped on the floor and broken. I have never tried how much pressure they would stand.

x-Q. 142. I call your attention to the first lines at the top of the first column of page 2 of your patent, in which you say that

"a good way to apply pressure, however, is to wait until the wax has partly set and then screw down the tapering core into its base-1" (halves mine).

and I ask you what you meant when you used the expression "set" as you did?

A. The object of that was that if there was a doubt as to the sharpness of this wax mold, pressure could be applied to the core to force it down into the base, but I found that this was not necessary and it was never used.

x-Q. 143. You have not answered my question. I did not ask you what the object was, I asked you what you meant by the expression "set" in your specification?

A. Well, cooled, set when it got beyond the fluid state.

x-Q. 144. And does not the material thus set or get beyond the fluid state before it gets cold?

A. I should judge so.

x-Q. 145. Now, returning to my x-Q. 135, after you had made the mold with the record in reverse in its bore and had poured the molten material into the mold around the core, the material then "set," did it not?

A. It set provided the atmospheric conditions were not too warm to keep it in a fluid state.

x-Q. 146. And the atmospheric conditions you took care to be in such condition that the material would thus set, did you not?

A. Yes.

x-Q. 147. Now, after you had made your mold with the record grooves in reverse in its bore, and had poured the molten material into the mold around the core, and had caused the material to set, you then still further cooled the material to cause it to contract away from the mold, did you not?

A. I sometimes cooled the material and sometimes did not. I sometimes cooled it when I was in a hurry to get it out.

x-Q. 148. By that you mean that you either cooled it or let it cool?

A. I sometimes cooled it, or I let it cool if I was not in a hurry.

x-Q. 149. And when the material was contracted you withdrew it from the mold lengthwise?

A. I did.

x-Q. 150. I understand then that in practicing your invention you made a mold by the electro-deposition of metal on the original record, thereby getting a mold with the record in reverse in its bore, that you then poured molten material into the mold around the core, permitted the material to set, then cooled the material or permitted it to cool, thereby causing it to contract, and then took the record out of the mold. Is that correct?

A. It is.

x-Q. 151. Now the only thing which you did in practicing your process and which I omitted from the last question was the fact that you heated the mold before you poured the material into it, was that not so?

A. I can't keep the run of that, but I admit that I heated the mold.

x-Q. 152. What did you do in practicing your invention, other than the heating of the mold, which is not mentioned in my x-Q. 150?

A. I would rather you would ask me a direct question rather than answer that.

x-Q. 153. I have no doubt of the perfect truth of your last answer but I am doing the questioning here and shall have to be permitted to put my questions in my own way. I again ask you, is there anything except the heating of the mold, which you did

in practicing your invention which I have not included in my x-Q. 150?

By Mr. Dyke:

Objection is made to the manner in which the defendant's counsel is proceeding with his questioning, its evident purpose being to confuse the witness. The question is further objected to for the reason that it calls for a conclusion.

By Mr. Cameron:

Counsel for defendant replies that he has sought to show this witness every consideration, since it is perfectly evident that the witness is seeking to answer the questions propounded to him in good faith. Counsel for complainant, however, in his direct examination has seen fit to draw out from the witness what he did in making this invention, and it is defendant's undoubted right to go into this matter fully and get a statement from the witness as to just what he did. This is the sole purpose of the question objected to and it is therefore insisted upon.

A. As I understand the question that is the only thing I did.

Cross-examination of witness closed.

Re-direct examination by Mr. Dyke:

Rd-Q. 154. Mr. Joyce, as you understand the subject, is a casting operation confined to the filling of a mold by pouring?

A. There are several ways of casting. In casting type the metal is pumped into the mold. In casting stereotype plates now-days the metal is pumped into the mold. In the old method of casting stereotypes the molds were immersed into the molten metal. In casting monotypes or linotypes the metal is pumped into the mold or matrix.

Rd-Q. 155. I gather from your answer that you mean to say that a casting operation can be made by other modes than pouring, is that right?

By Mr. Cameron:

Question is objected to as grossly leading.

A. Yes.

Rd-Q. 156. Since you do not regard pouring as an essential to casting, what do you regard as the essential features in a casting operation?

By Mr. Cameron:

The question is objected to unless the witness is offered as an expert in casting, and counsel for complainants is warned that if the question is persisted in, defendant shall insist on the right of cross-examining the witness as an expert in casting.

By Mr. Dyke:

Question withdrawn.

Rd-Q. 157. Who, if you know, was the man named as Mr. Devine in the letter of Rogers in evidence as Complainant's Exhibit Robert Fletcher Rogers Letter to Joyce July 5, 1898?

By Mr. Cameron:

Counsel for defendant objects to the question as not proper redirect, since in his cross-examination the witness was not asked a single question in the remotest way relating to the subject-matter of the question just propounded to the witness.

A. I understood Mr. Devine to be the vice-president of the Columbia Phonograph Company.

By Mr. Cameron:

Answer objected to as hearsay.

RECESS.

Rd-Q. 158. Mr. Joyce you have been asked about the statement in your patent that the mold is expanded by heating. Did you endeavor to make any particular use of this expansion of the mold when you carried on the work of making molded duplicate cylindrical sound-records to which you have testified?

By Mr. Cameron:

Question objected to as not proper re-direct.

A. I knew that the metal expanded and shrunk on cooling, and I wanted to take advantage of whatever results there might be from the expansion and contraction thereof.

Rd-Q. 159. How was this of advantage to you?

A. I don't know that there was any advantage; I thought if there was I would take advantage of it. I knew that the metal expanded upon heating and shrunk upon cooling.

Rd-Q. 160. State as nearly as you can how long a time elapsed from the making and using of Mold No. 1, which has a blank interior surface, until you made a mold having a record groove in reverse upon its interior surface and cast a record cylinder therein?

By Mr. Cameron:

Question objected to as not proper re-direct.

By Mr. Dyke:

Attention is directed to x-Q. 117, to x-Q. 122, and the answers thereto, as showing that this mold and its purpose have been inquired about during the cross-examination of this witness.

By Mr. Cameron:

Counsel for defendant states that this matter was also gone into on direct examination and that the question now propounded to the wit-

ness relates to information which should have been brought out on such cross-examination; that defendant was entitled to such information in conducting such cross-examination and, moreover, that the question propounded does not relate to any matter specifically brought out by such cross-examination.

A. It may have been a few days between the time, probably a week; I can't tell exactly the time.

Re-direct examination closed.

Re-cross examination of witness by Mr. Cameron:

Rx-Q. 161. Was it not your idea that the mold when heated would expand and that upon cooling after the casting was allowed to partially set therein the mold would shrink and thereby exert a pressure on the casting and that you hoped to thereby get a more sharp impression?

A. I may have thought so at the time, but found that the shrinkage of the wax was greater than that of the mold, and found that the contraction of the mold did not have any effect upon the cast duplicate because the contraction of the wax was greater than that of the mold.

Rx-Q. 162. But at the time you made your application you specifically mentioned the expansion of the mold due to the heating, did you not?

A. Yes, this heating expands the mold slightly.

Rx-Q. 163. And you thought at that time that the contraction of the mold would exert pressure upon the cast, did you not?

A. I may have thought so.

Rx-Q. 164. As a matter of fact, did you not know that it was old at that time to use a heated mold in making a duplicate sound-record, which mold of course would contract when it cooled and thus exert pressure against the duplicate within the mold?

By Mr. Dyke:

The question is objected to as a further attempt on the part of defendant's counsel to inquire into what the witness knew when he performed the operations which he has specified, as distinguished from what he did, which was what the question originally propounded to the witness was directed to. The objection is that the question is not proper cross-examination, for this reason.

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A. I did not. I never saw a duplicate cast record until I made one.

Examination of witness closed.

Signature and certificate waived.

MAURICE E. JOYCE, a witness produced on behalf of complainant, being first duly sworn, testifies as follows in answer to interrogatories by Mr. Dyke, to wit:

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Question 1. Please state your name, age, residence and occupation?

Answer. Maurice E. Joyce; age 22 years; residence 922 M St., N. W., Washington, D. C.; occupation, Half-Tone Operator and Electrician.

Q. 2. Mr. Joyce, I place certain articles before you which are marked as exhibits in this suit as Complainant's Exhibit Joyce Mold No. 1, Complainants' Exhibit Joyce Mold No. 2, and Complainants' Exhibit Joyce Mold No. 3. Please state what these articles are, if you know?

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A. They are copper molds for phonographic cylinders.

Q. 3. I also show you certain other physical exhibits in this suit marked Complainants' Exhibits Joyce Base No. 1, Complainants' Exhibits Joyce Base No. 2, and Complainants' Exhibits Joyce Core. Please state what these articles are?

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A. The bases used in connection with molds for phonographic cylinders. The core is also used in connection with molds for phonographic cylinders.

Q. 4. Did you ever see these various exhibits before, and if so, where?

A. I have, and in the annex to the Evening Star Building, Washington, D. C.

Q. 5. In what portion of the Star Annex?

A. By that do you mean on what floor?

Q. 6. Answer as best you can, Mr. Joyce.

A. Third floor, also the fourth.

Q. 7. To what is that floor of the Star Building Annex devoted?

A. To Maurice Joyce Engraving Company.

Q. 8. Do you know Maurice Joyce, who has just testified in this case?

A. Yes, sir.

Q. 9. Who is he?

A. My father.

Q. 10. Has he any connection with the Maurice Joyce Engraving Company, of which you just spoke?

A. Yes, sir. He is part owner of that business.

Q. 11. What does your father do?

A. He is an engraver.

Q. 12. Where does he work?

A. At the Joyce Engraving Company's plant.

Q. 13. That is the plant in the Star Building to which you have just referred, is it not?

A. Yes, sir.

Q. 14. Where are you employed?

A. Maurice Joyce Engraving Company.

Q. 15. Where were you employed during the years 1894-1897?

A. To the best of my recollection by the Standard Engraving Company and the Maurice Joyce Engraving Company.

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Q. 16. Were you familiar with what your father was doing during those years?

By Mr. Cameron:

Objected to as leading.

A. Along certain lines, yes.

Q. 17. State what you know, if anything, about the molds, bases and core which you have just identified?

A. I saw the molds during the process of making from time to time; I saw the bases used in connection with the molds; I also saw the mandrel or core used in connection with the bases and molds. I also saw molds cast of wax. I saw bases, molds, mandrels or cores, together with wax placed in an oven, after which they were removed from the oven, the mold filled with wax, cooled or allowed to cool, and removed, placed upon a mandrel or core, and put on a phonograph fitted with a reproducer and heard tones of various kinds.

Q. 18. Who did this work?

A. Mr. Joyce, my father.

Q. 19. By the "mandrel or core" last mentioned in the answer that you have just given, do you mean the same mandrel or core which is an exhibit in this suit?

A. I mean the mandrel or core exhibited, or one similar to it.

Q. 20. Could a record be placed upon a phonograph mandrel with a core like that in it?

A. At that time, yes.

Q. 21. Have you any recollection of the time when the operations to which you have testified to as having witnessed were performed, and is there anything in your life or experience by which you can fix this time? If so, please state the time as near as you can and anything by which you can fix that time.

A. As near as I can recollect I should judge it to have been in the neighborhood of 1892 to 1894. I think that I left school in 1893, and believe that it was about that time that these experiments were carried on.

Q. 22. Can you fix this time with any certainty?

A. None other than as stated.

Q. 23. When was the change made from the Standard Engraving Company to the Maurice Joyce Company, if you know?

A. I remember the change but cannot state when it took place.

Q. 24. Can you fix the time of these operations relative to that change of business?

A. To the best of my knowledge it was before and after.

Direct examination closed.

Cross-examination of witness by Mr. Cameron:

x-Q. 25. Mr. Joyce I do not understand you to say that you have seen records made by the use of the identical molds and bases and core offered here as exhibits, do I?

A. Yes, sir.

x-Q. 26. All three of the molds?

A. That I cannot state, nor can I state that they were made from these molds, but I have seen records molded by this process by my father, Mr. Joyce.

x-Q. 27. By what process?

A. By placing mold in base, then placing mandrel or core in base, placed in gas oven, together with wax, after wax had melted poured into mold, after cooling, core or mandrel and mold removed, and have seen said cast placed upon mandrel, put in reproducing machine, and have heard musical

sounds, and tones. One of the casts that I heard on a phonograph made by said process I think was a Russian March.

x-Q. 28. Then you do not wish to be understood as swearing that you have seen these identical molds employed in making casts, do you?

A. The molds as exhibited, or similar ones, I can.

10 By Mr. Cameron:

Question repeated.

A. I could only do so after hearing a cast made from exhibited molds.

By Mr. Cameron:

Question repeated and the witness' attention called to the fact that he is asked whether he wishes to be understood as swearing that he has seen these identical molds employed in making casts.

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A. I do not.

x-Q. 29. Did you ever see these identical bases employed in making casts?

A. I saw bases that I believe to be these exhibits.

x-Q. 30. Are you willing to swear that they were these exhibits?

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A. Yes; because I have never seen any other than these.

x-Q. 31. Please examine Exhibit Mold No. 1. Did you ever see a record made in a mold like that?

A. I cannot without the aid of a magnifying glass tell whether or not Mold No. 1 has been made from a blank or a record. Therefore I cannot say whether I have seen a cast record made from said mold.

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x-Q. 32. Then you do not wish to be understood in your answer to Q. 17 as saying that you have seen casts placed upon the mandrel of a phonograph fitted with a reproducer and heard tones of various

kinds,—I say you do not wish to be understood as saying that the tones you heard reproduced were taken from a cast like Mold No. 1?

A. I do not.

x-Q. 33. You did not make this exception when you were testifying in answer to Q. 17, did you?

A. I did not, for the reason that in answer to Q. 17 I did not have particularly mold No. 1 in mind.

x-Q. 34. You had just identified these molds, had you not?

A. I had.

x-Q. 35. And you were asked to state what you knew if anything about the molds, bases and core which you had just identified and in answer thereto you gave the answer under Q. 17, and you did not except Mold No. 1, did you?

A. When I identified the exhibit I did so because I believed that they were the ones I saw originally, and the only ones that were in existence when I first saw them.

x-Q. 36. Did you ever see any other molds similar to No. 1?

A. May I ask in what respects?

x-Q. 37. Did you ever see another mold just like No. 1?

A. I do not understand what you mean by "just like No. 1." No. 1 may or may not be a mold of a blank.

x-Q. 38. You have undertaken to identify this mold. You have it before you, and I again ask you if you ever saw any other mold like it? If you know you can say so. If you don't know you can say that.

A. I have seen molds similar to it.

x-Q. 39. Did you ever see one like Mold No. 1?

A. Now, that's a question that I am trying to answer with justice to myself and all concerned, but I cannot unless the attorney specifies in exactly

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what respects I have seen, or have not seen, others like it.

x-Q. 40. The fact is you do not know whether you have ever seen other molds like this or not, do you?

A. That I cannot say, because, as before stated, I cannot tell whether or not the mold was made from a record cylinder or a blank. If I say that it is made from a record and it proves to be a blank I am wrong.

x-Q. 41. Now as you do not know whether this is a mold from a blank or from a record, how are you able to identify it as the mold which you have seen before?

A. I saw the molds which were made by coating a record or a blank cylinder with plumbago immersed in a solution of copper surrounded by an anode, a current applied, copper deposited on said blank and record, and I believe that the exhibits before me are those made by Mr. Joyce, my father. I have seen them a number of times since they have been made, and they all have the general appearance of having been made by that method.

x-Q. 42. Now, Mr. Joyce, don't you know that there are tens of thousands of such molds made in precisely the manner which you have just described?

A. I do not.

x-Q. 43. If such is the fact, and I assure you it is a fact, is there anything about these particular molds that enables you to say that these are the ones that you saw made?

A. If molds similar to these are made I have never seen them. I can call to mind that I think I can recognize these molds through their thickness.

x-Q. 44. Do you know whether your father made any molds in the year 1897?

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A. I do not. I cannot call to mind anything that happened in 1897 in connection with these or any molds.

x-Q. 45. Do you remember any change which your father made in his business in 1894?

A. I know that a change was made. Whether or not it was in 1894 I cannot with any degree of certainty say.

x-Q. 46. Your father has stated that he made a change in his business in 1894 and that he knows he commenced experiments after he made that change in his business. If this is true then you are mistaken in your idea that you witnessed these operations in the neighborhood of 1893 to 1894, are you not?

A. If Mr. Joyce has stated that he commenced operations along this line in that year I will state that I do not care to contradict him, and my question was answered in accordance with the best of my knowledge and belief.

x-Q. 47. Will you make oath to having seen any of these experiments in the year 1892?

A. No.

x-Q. 48. In 1893?

A. No.

x-Q. 49. In 1894?

A. No.

x-Q. 50. In 1895?

A. No.

x-Q. 51. In 1896?

A. No.

x-Q. 52. In 1897 or 1898?

A. No.

x-Q. 53. The fact is that these events occurred a good many years ago and you cannot positively fix the year in which you think you saw them. Is not that true?

A. Yes, sir.

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x-Q. 54. You say your father placed the mold in an oven and heated it before he poured the melted wax into the mold, is that right?

A. It is.

x-Q. 55. Did you ever see him mold the casting without heating the mold?

A. I have.

x-Q. 56. Did you ever hear any of the casts that were thus made reproduced on a graphophone or phonograph?

A. I cannot say that I have.

x-Q. 57. Can you say that you have not?

A. No.

x-Q. 58. Did you ever hear the castings that were made in a hot mold reproduced on a graphophone or phonograph?

A. I have.

x-Q. 59. You are positive that they were not castings that had been made in a cold mold?

A. I am.

x-Q. 60. When did you hear such reproductions?
A. On one occasion I saw a cast made by means of the heated mold, saw that cast placed on the machine, and heard musical tones from it, and I believe that the said cast was a reproduction of a Russian March. I do not know when.

x-Q. 61. Is that the only occasion upon which you are willing to swear that you heard a reproduction from a casting made in a heated mold?

A. Yes, being the first it made an impression, but after then I heard them on several occasions but I could not swear that they were made in heated molds.

x-Q. 62. Was the Russian March cast made in a mold like No. 2?

A. I believe it to have been.

x-Q. 63. Was it made in a mold like No. 2?

A. I believe it to have been.

x-Q. 64. Was it made in a mold like No. 1?

A. I believe No. 1 to be a mold of a blank, and consequently no.

x-Q. 65. Did you ever see any casting made in any one of these molds Nos. 1, 2 and 3 when said mold was heated?

A. I cannot swear that I saw casts made from these molds exhibited, but I can swear that I have seen casts made from molds whose general appearance resembled the exhibits, with the exception of No. 1, which as before stated I believe to be a blank.

Cross-examination closed.

Deposition closed.

Signature and certificate waived.

STIPULATION.

It is stipulated that MAURICE JOYCE, who has testified herein, has had move this one application in the Patent Office involving the duplication of graphophone or phonograph sound-records, and that Stillson Hutchins, if called as a witness would testify that, in return for certain moneys which he advanced to Mr. Joyce in connection with expenses incurred, he, the said Hutchins, had a part interest in an invention of Mr. Joyce relating to the duplication of graphophone or phonograph sound-records; and further that he would testify that he does not remember anything more than this about the matter.

Adjourned subject to notice.

DEPOSITION OF WALTER H. MILLER.

WALTER H. MILLER, a witness produced on behalf of complainants, being first duly sworn, deposes and says, in answer to questions propounded by Mr. Dyer, as follows:

Q. 1. Please state your name, age, residence, and occupation?

A. Walter H. Miller; age, 38; residence, Linden Place, Orange, New Jersey; occupation, manager of the Recording Department of the National Phonograph Company.

Q. 2. Are you the same Walter H. Miller who jointly with J. W. Aylsworth, filed the applications for patents Nos. 683,615 and 683,676, granted to the National Phonograph Company, here in suit?

A. I am.

Q. 3. Can you state where Mr. Aylsworth is at the present time?

A. At Fort Myers, Florida.

Q. 4. How long has he been at Fort Myers?

A. Somewhat over a month.

Q. What was the condition of Mr. Aylsworth when he went away?

A. Objected to as incompetent.

A. He had been very ill since November and was ordered to return for his health and is not expected to return for several months.

Q. 5. The applications for patents Nos. 683,615 and 683,676 here in suit were filed July 31, 1900; prior to that date had you carried out the process and used the apparatus for duplicating phonographic records described in these patents, and if so, to what extent?

By Mr. Massie:

Objected to as calling for a conclusion.

A. During the latter part of the year 1898 we borrowed a mold from Mr. Wurch, who had charge of making the molds at the laboratory, and a few dipped samples were made by inserting a mold into a baking powder can with a hole in the bottom, and immersed the same by lowering it into a pot of molten wax. The mold was then chilled and which

allowed the film of wax to contract from the mold. Several records were made by this method from time to time, and active experiments were started in February, 1899. Up to this date the samples we had made were only thin films of wax, about 1-16 of an inch thick, and after February, 1899, we began to experiment with the view of making these records thicker, and succeeded in getting satisfactory results prior to January, 1902, when the records were first put on the market commercially by the National Phonograph Company, at which time we had six hundred selections placed in our catalog and stock made of same.

Q. 7. How did you happen to take up this problem of making duplicated phonograph records?

A. Aylsworth and I were talking over the proposition and we thought that we could mold a practical commercial record from a mold.

Q. 8. Did you ever discuss this question with Mr. Edison?

A. Quite frequently.

Q. 9. Did Mr. Edison request you and Aylsworth to undertake the development commercially of the problem?

A. Yes, sir, he did.

Q. 10. Was this before the latter part of the year 1898, when you borrowed the mold from Mr. Wurch, with which you made your first experiment?

By Mr. Massie:

Objected to as leading.

A. When Mr. Edison gave us instructions to go ahead with the experiments on these records, it was between the latter part of 1898 and February, 1899.

Q. 11. Then, as I understand it, you and Aylsworth discussed the feasibility of making molded records before Mr. Edison authorized you to go ahead and endeavor to develop the problem commercially?

A. We did.

Q. 12. How far did your experiments go towards demonstrating the commercial practicability of the process from February, 1899, when you appear to have commenced your active experimenting, until July 31, 1900, when the applications for patents Nos. 683,615 and 683,676 were filed?

By Mr. Massie:

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Objected to as calling for conclusions as to "the process" and as to "commercial practicability."

A. We had a small commercial plant in actual operation producing commercial records for the market under the process described in these patents late in 1899.

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Q. 13. Had you succeeded in making satisfactory copies of phonograph records by the process described in these patents prior to July 31, 1900?

By Mr. Massie:

Objected to as leading, and as calling for a conclusion with regard to the alleged process."

A. Assuming that these patents were filed on that date, July 31, 1900, I am positive that satisfactory records were made prior to that time.

30

Q. 14. One of the features of the process and apparatus disclosed in these patents is the formation of a series of ribs on the interior of the duplicate record; what was the particular purpose of using this feature, and what, if any, practical advantages does it possess?

40

A. The advantage of making the concentric rings in a molded record is that it is one of the best ways of making a true molded record. By true, I mean a record that runs concentric and does not wobble when put on a mandrel. Another advantage is that it enables us to turn out the surplus wax which is

not needed, and in this way cheapen the record. It is also a very quick method of boring cylinders and enables us to do it in one operation, although sometimes two are used. It has great advantages over the spiral rib record, inasmuch as in order to make a molded record with a spiral, it is necessary to use a core and chill the inside of the core as well as the outside of the mold, in order to allow the molded record to be released from the core. When this method is used, there is a contraction on the outside of the cylinder and also on the inside. The two contractions never being even, causes them to run out or become eccentric, much more so than records with concentric rings, as with our patents. Another had point to records with a spiral thread, and made as explained above, that is by a core with a spiral groove, is that this uneven contraction makes the record much more brittle than made by the method under patents Nos. 683,615 and 683,676.

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Q. 15. In reference to the saving in material by running out the interior of the records to form a series of parallel ribs, as disclosed in the two patents in suit, as compared with casting the records, with the spiral rib, without running, can you state approximately to what extent a saving is effected?

By Mr. Massie:

Objected to as immaterial, on the ground that among other things that neither patent is for a record having parallel or concentric rings, nor for the process of making such records.

30

A. I should say about 20%.

Answer objected to as incompetent on the ground that it does not appear that the witness is familiar with any other process of making molded records.

Q. 16. Are you familiar with any other process

40

of making molded records than that disclosed in the two patents referred to?

A. I am.

Q. 17. What process do you now refer to as being other than that disclosed in said patents?

A. The process of making sound records and blanks in patents Nos. 726,965, granted May 5, 1903, to W. H. Miller and A. N. Piernann, and patent No. 726,966, granted May 5, 1903, to W. H. Miller and A. N. Piernann.

By Mr. Dyer:

Copies of patents numbered 726,965 and 726,966, referred to by the witness, are offered in evidence and marked "Complainants' Exhibit, Miller-Piernann Patent No. 726,965 and Complainants' Exhibit, Miller-Piernann Patent No. 726,966."

It is admitted by counsel for defendant, subject to correction in case of error, that the applications for the patents last referred to were filed November 21, 1902, and that each of said patents was granted to the National Phonograph Company, one of the complainants herein.

Question objected to as not properly stating the process of the patent inquired of, and as irrelevant and immaterial.

A. This process was used by me to make records in an experimental way; in fact, I made some molded records which were used for masters. This molded process was also used in the factory under the supervision of Mr. Nehr to produce regular commercial work, but it was abandoned as not a perfect success, and I think the cause was due to the excessive breakage and discards made in the process.

Q. 18. In comparing the advantages of a process wherein duplicate records were finished by a roun-

ing operation, forming a series of concentric ribs on the bore, with a process of molding a record by casting a spiral rib on the bore, was your comparison based upon actual experience in the art, or merely upon theoretical considerations?

A. Upon actual experience in the art with the Miller and Piernann process.

Q. 19. You state that the molded records made under your process (Miller & Aylsworth patents in suit) were first put out commercially by the National Phonograph Company about January, 1902; are the records of the National Phonograph Company now made by the same process or have they been changed since that date?

Objected to as calling for a conclusion.

A. They are the same and have not been changed with the exception of improvement of molding the name at the end, which, however, is disclosed in our patents.

Q. 20. Are you able to say whether the molded records made by the National Phonograph Company under your process met with any public favor? I have reference, of course, to the records manufactured under the Miller & Aylsworth patents in suit?

Objected to first, as calling for a conclusion with regard to what is the process of the patents referred to, and second, as incompetent and immaterial.

A. They have become enormously popular, and at times we have had to produce over a hundred thousand a day.

Q. 21. Having reference now to the particular feature of forming a series of concentric or parallel ribs, on the record by a running operation, while the record is still in tight engagement with the mold, and while the material is sufficiently plastic as suggested in the Miller & Aylsworth patents in suit,

what, if any, commercial and practical value do you attribute to this feature?

A. It has the advantage of producing them cheaply; economizing on material, getting the best possible result with reference to having them run perfectly concentric; also, the advantage of molding them to produce the least brittle record with the material used.

10 Q. 22. By reaming the record, as suggested in the Miller & Aylsworth patents, what about the time required to finish the operation as compared to casting a spiral rib on the bore?

Objected to as indefinite.

A. The time consumed in making a record by either one of these processes varies somewhat as to the temperature of the wax and the length of chill, and I do not think there is any material difference
20 in either as to time.

Q. 23. With reference to the reaming operation disclosed in these Miller & Aylsworth patents, where the reaming is performed while the record still tightly engages the mold, did you regard this as a feature of importance or as an unimportant detail?

Objected to as entirely incompetent and as utterly immaterial.

30 A. I thought this was one of the most important features in the process; in fact, I advised our attorney to be especially careful to cover all the points on this particular operation.

Q. 24. In your opinion as a practical man, would it be possible at the present day to make commercial duplicate records by casting a spiral rib on the bore?

A. Not in competition with the process now in use, namely, that covered by the Miller & Aylsworth patents.

40 Q. 25. That is to say, because of the special ad-

vantages which you have pointed out, as being obtained by this special process of reaming out the record while still in the mold. Is this correct?

A. It is.

Q. 26. Having reference to the two Miller & Pierman patents above referred to, numbered 726,965 and 726,966, of May 5, 1903, applications filed November 21, 1902, what, if anything was done with this process prior to filing the applications for those patents? 10

By Mr. Massie:

The question is objected to as immaterial.

A. Experiments were started on this process around September 9, or the middle of September, 1902, and the object was to secure a record that was more or less indestructible. It was a method of molding a record by heating the mold to a temperature of about 300°, more or less, and inserting
20 into the mold a ribbed core covered with sheet fiber, such as cotton, cloth or other material and pouring hot wax into it from the bottom by inserting it into a pot of wax with studs on the bottom of the core to automatically lift the mold and the wax would run in. It was then taken out and chilled in water both inside the core and out. It was then extracted by unscrewing the core from the record and the mold was then put in a cold jacket and the record
30 extracted.

Q. 27. With the process of this Miller and Pierman patent No. 726,965, I understand that the mold and core were introduced into the heated wax-like material, which entered the space between the mold and the core, and heated the mold and the core to the temperature of the wax-like material. Is this correct?

A. That is correct.

Q. 28. And as I understand it, you also carried 40

out the modification of this process in which the mold and the core were independently heated before the wax was introduced. Is that correct?

A. That is correct.

By defendant's counsel:

Does the witness intend by the last answer
to describe something set out in the Miller &
Pierman patent?

A. I do not know whether it is in the patent,
but I know that we did this. In fact, I am certain
that was done prior to the entrance of the wax at
the bottom as specifically shown in the Miller-Pier-
man patent No. 726,965.

Q. 29. In this latter patent, the statement is
made that the winding of fibrous material around
the core may be dispensed with, and a record be
made wholly of a wax-like material by the process
described therein, namely, by introducing the mold
and core in the hot wax-like material so as to heat
the mold and core to the temperature of the wax-
like material which enters the space between the
mold and the core. Did you ever carry out this pro-
cess for making records wholly of wax-like material,
or the equivalent process for that purpose consist-
ing in first heating the mold and the core before
the introduction of the wax-like material?

Question objected to as not properly stating
the process of the patent inquired of, and as ir-
relevant and immaterial.

A. This process was used by me to make records
in an experimental way; in fact, I made some
molded records which were used for masters. This
process was also used in the factory under the
supervision of Mr. Zahn to produce regular com-
mercial work, but it was abandoned as not a per-
fect success, and I think the cause was due to the

excessive breakage and discards made in the pro-
cess.

Q. 30. Did you make molded records for masters
by the Miller-Pierman process before November 21,
1902, the date of the applications for these patents?

Objected to as calling for a conclusion, and
as tending to mislead in view of Q. 29.

A. I did.

Q. 31. Has this general process, consisting in in-
troducing the hot wax-like material into a pre-
viously heated mold, or into a mold which was
heated by the wax-like material, to your knowledge,
been practically used by the National Phonograph
Company, since the filing date of these applications,
November 21, 1902, and if so, to what extent?

The objections are repeated, and the question
is objected to as tending.

A. This method has been used to the extent of
making a large number of our molded masters used
for our regular business, and is now in use.

Q. 32. How perfect do you regard the process
for making the duplicate records, consisting in in-
troducing the hot wax-like material into a heated
mold?

Objected to as indefinite and not stating suf-
ficient details as to temperature, duration of
operations and other manipulations.

A. This process is excellent and one of the best
for accurate molding, but for production it is very
inferior to the dipping method, since a higher class
of labor is required to make it successful.

Q. 33. Are you familiar with the details of this
hot mold process as the same is now practiced by
the National Phonograph Company, and if so, please
describe it?

A. The molds are inserted on a core and heated on a gas burner in such a way that the flame does not come in contact with the inside of the mold, to a temperature varying according to the composition from 250° up; we then pour wax in the top of the mold with a dipper; it is then inserted in cold water to chill it. When it is cooled to a somewhat plastic state, it is taken out of the water and the core pushed out, there being no threads on the core. The mold is then placed in a chuck in the lathe and run out as described in the Miller & Ayresworth patents Nos. 655,676 and 658,915, except that we do not turn ribs in them. The results of this method are used for masters to make molds to turn our regular product.

Q. 34. In making molded masters, is a higher degree of perfection required than in making the regular product?

A. These molded masters for molds must be perfect in every sense; they must have a perfectly clean, polished surface, and absolutely free from air holes.

Without waiving objections already entered defendant's counsel cross-examines *de bene esse*.

By Mr. Massee:

x-Q. 35. Are you the W. H. Miller named in the two Miller & Piernan patents referred to herein?

A. I am.

x-Q. 36. What is the temperature approximately of the molten wax-like material you employed in carrying out what you understand to be the process of these Miller & Piernan patents?

A. Between 300° and 400° F.

x-Q. 37. I understand that you are familiar with the production of the molded master records made by the National Phonograph Company. Is the master wax employed for that purpose substantially the same as the wax employed for molding complainant's regular cylinder records?

A. I do not know the exact composition of this material, but its actions are very similar to that used in our regular process. I understand there is a slight change made in order to produce a certain shrinkage which is necessary to make the threads on the record come to the right number per inch.

x-Q. 38. So far as you are at present aware, except for the fact that the master wax is more accurately prepared as regard to shrinkage, there is no material difference between that and the ordinary wax of the Edison molded records?

A. So far as I know there is no other difference. You must remember I am not the wax man; we take our wax as it is given us to mold.

x-Q. 39. About what is the melting point of the master wax?

A. As near as I remember, about 200°.

x-Q. 40. Did you not mean that for about 190° F?

A. I did not.

x-Q. 41. In answer to Q. 26, you speak of heating the mold, to a temperature of about 300°, more or less. Does this mean degrees Fnh, and did you actually read the temperature or is this from general impressions?

A. This temperature I speak of is Fahrenheit, and the way I judge the temperature of the mold, is that it is the custom to wet your finger and touch it quickly, or spit on it to see if it sizzles, and I assume that water boils at 212, and we wait until this sizzles considerably, and from that I judge that the temperature of the mold must be considerably over 225°.

x-Q. 42. With regard to the process carried out by the National Phonograph Company in making its molded masters, is the temperature of the mold about the same, and is the temperature of the molten wax about the same, namely, about 300° F., more or less?

A. The molds are about 300° F., and the wax, or the temperature of the wax used, varies considerably. I have noticed from my own observations they would be molding satisfactory records between the temperatures of 325 and 400° F.

x-Q. 43. Please state every difference with regard to process and temperature, etc., between the method of making Edison molded records for the market and the method of making molded master records for the market?

A. The process used under the Miller & Aylsworth patents. We have a mold which is open on the top and bottom and is placed in a brass jacket. This brass jacket and mold is slightly warmed, I should say about the temperature of 100° F. It is placed in a can with a hole in the bottom in such a manner that when this can is lowered in a pot of wax, the wax enters the bottom of the can through the center of the mold to within $\frac{1}{4}$ of an inch above the top, a brass cap being placed on the mold to prevent it from overflowing. This mold remains in the wax for about one minute and a half, in order to let the wax congeal to a sufficient thickness. It is then drawn out of the wax, taken out of the can and then out of the cylindrical jacket. The ends are then trimmed while in a plastic state, the mold inserted into a chuck and reamed. It is then placed in a cold jacket, which causes the cylinder to contract and become loose from the mold. It is then placed on a tapered shell, the same shape as the photograph mandrel, and allowed to cool thoroughly.

For the hot process, I would refer you to my answer to Q. 33.

x-Q. 44. In carrying out what you have described in answer to Q. 33, which you refer to as the hot process, in your opinion, are you carrying out what

you understand to be the process of the Miller & Aylsworth patents in suit?

A. I am of the opinion that this is under the patents of Miller & Piernan.

x-Q. 45. Does that mean that in your opinion the so-called "hot process," as used in making the master records, does not carry out what you understand to be the process of the Miller & Aylsworth patents in suit?

A. My understanding of the hot process is that we use that part of the Miller & Aylsworth patents which refers to the reaming of the record before it has left the mold.

x-Q. 46. In Q. 29 you were asked regarding what is there termed the equivalent process of the Miller-Piernan patent, where the winding of fibrous material is dispensed with? In carrying out the process referred to (where the record is made wholly of the wax-like material) in your opinion were you practicing the process of the Miller & Aylsworth patents here in suit?

A. Those records which I referred to that we made for masters were reamed out before the cylinder left the mold; I do not think it would be possible to mold a record with a core in it without reaming it in some manner and use it for a master.

x-Q. 47. How long have you been familiar in a general way with the photographic art?

A. I should say, roughly, 18 years.

x-Q. 48. During that period has it not happened quite frequently that the interior of the cylinder was reamed out whether it had spiral ribs, or other forms of ribs, or no ribs at all?

A. The process of reaming blanks has been used, I might say, from the beginning, but blanks are made entirely different from molded records, as they are first reamed on the inside; they are then put on a mandrel and turned on the outside, in order

to make them true. In the case of molded records, the outside cannot be tampered with.

x-Q. 49. I understand that sometime about the latter part of the year 1898, you and Mr. Aylsworth had done some work in connection with a record mold, a baking powder can and some melted wax; that you thereafter had one or more conferences with Mr. Edison, who authorized you to go ahead with the matter seriously; and that in February, 1899, you began active experiments, which resulted in the matters and things set out in the patent in suit. Can you state the substance of what you and Mr. Aylsworth had accomplished before you consulted with Mr. Edison on the matter and the substance of your disclosure to Mr. Edison?

A. The samples which we showed to Mr. Edison at this time were quite perfect as to their general surface, but their thickness as a record was not over 3/32 of an inch. In order to play these records, we made a shell which would slip on the mandrel, and then this record would slip over that shell. This, as near as I can remember, is the exhibit we made to him.

x-Q. 50. I understand that for practical use such a record would be too thin, and that your work, beginning seriously in February, 1899, resulted in the production of castings having sufficient thickness. Please state what you did, what means you employed, etc., to make these substantial records which you did not employ in making the first thin ones?

A. Mr. Aylsworth and myself thought these records were quite commercial but, however, it was thought best to experiment to make them thicker, and in order to do this it was accomplished by a change in the composition and making the mold thicker.

x-Q. 51. If I understand you, before the interview with Mr. Edison with the molds you then en-

played, and with the particular "wax" you then employed, you succeeded in getting cast records that were only about 3/32 of an inch thick; but thereafter by employing a different composition and making the wall of your mold thicker (so as to contain more metal) you obtained a thicker deposit, which satisfied the requirements of the management of your Company. Please state in a general way the nature of the two different compositions and briefly show wherein they differed?

A. In all these experiments Mr. Aylsworth had charge of the wax end of the work, while I took care of the mechanical end. As near as I recollect, with the particular composition in which our records were only 3/32 of an inch thick, it was impossible for us to get it any thicker.

x-Q. 52. How about the appearance of the bore of the deposit obtained in those first instances? Was it perfectly smooth, or more or less lumpy or uneven?

A. The surface was perfectly smooth, as we reamed it with a straight knife.

x-Q. 53. I meant before any reaming, and after the deposit was chilled?

A. The surface was shiny, but when a cylinder is dipped in this manner it is always necessary to ream it, as it is always thicker in one end than the other. That is to say, the bore is of smaller diameter at one end than the other.

x-Q. 54. I understand that the thin casting as thus first obtained could not have been placed, without reaming upon a mandrel, if you had had a mandrel of the proper size? Was the deposit sufficiently thick to permit ribs either spiral or parallel to be cut therein?

A. They were not.

x-Q. 55. In casting sound records where a spiral

rib is cast simultaneously with making the record, wherein is any material wasted?

A. The fact that if you make a record with a tapered bore on the inside and a parallel surface on the outside, and you have contained in this bore a spiral thread elevated the same amount throughout the bore, it will take considerably more wax than if this same cylinder was made with a parallel wall on the outside and concentric rings made in it by scooping out considerable quantity of wax between these concentric rings, as is done in the Miller & Aylsworth process. In other words, by making the cylinder with a shell of the same thickness throughout (excluding the ribs, of course) less material will be required than if the wall of the cylinder varies in thickness from one end of the other, as for example, as suggested in the Miller & Pierman patent, and as was first used by the defendant with its first mottled records.

Adjourned to 10 A. M., March 5, 1908.

March 5, 1908.

Met pursuant to adjournment.

Present:

Counsel as before.

30 ALEXANDER N. PIERMAN, a witness produced on behalf of complainants, having been first duly sworn, deposes and says in answer to questions propounded by Mr. Dyke, as follows:

By Mr. DYKE:

Q. 1. Give your name, age, residence and occupation.

40 A. Alexander N. Pierman, age 38, residence 327 Orange street, Newark, N. J.; occupation, experi-

menter in the employ of the National Phonograph Company.

Q. 2. How long have you been employed continuously in your present capacity?

A. Since the latter part of June, 1902.

Q. 3. Are you the same Alexander N. Pierman, who jointly with W. H. Miller filed on November 21, 1902, applications for patents, which subsequently resulted in the issue of patent No. 726,965, dated May 5, 1903, to W. H. Miller and A. N. Pierman, for Process of Making Sound Records or Blanks, and patent No. 726,966, granted to the same parties on the same date for Sound Record or Blank, the same being offered as exhibits in these suits by complainants in the taking of the deposition of Walter H. Miller, and marked "Complainant's Exhibit, Miller-Pierman Patent, No. 726,965, and Complainant's Exhibit, Miller-Pierman Patent No. 726,966?"

A. I am the same man.

Q. 4. Please explain what work you did, if any, which led up to the filing of these applications?

Objected to as immaterial.

A. The work which led up to the filing of these applications was being performed in the laboratory by Mr. Vanderway, under Mr. Miller's direction. This work consisted in taking a mold having a record on the end of the bore, placing therein a shaved blank cylinder, which fitted snugly, the ends being sealed by a rod passing through two metal heads, which also carried rubber gaskets which pressed on the end of the mold containing the blank cylinder, thereby sealing it, rendering it waterproof. The apparatus as assembled was plunged in boiling water which heated the mold first, the mold in turn communicated the heat to the surface of the blank contained therein, which

in turn became partly soft on its surface, thereby expanding, owing to the nature of the material of which the blank was composed. The expansion of the blank caused a perfect imprint of the record upon its surface. The apparatus was then removed from the water and chilled until it felt cold to the touch. It was then thoroughly wiped dry on the outside, the heads being removed, the blank or record was removed by drawing it from one end of the mold. One of these records made by what was known as the expanding process was shown to me by Mr. Miller. The process was also explained to me at the time, and my opinion was asked of it. I made the statement to Mr. Miller that if the record could be put on there in perfect form by simply warming the surface of the blank, it could be put on there better if the wax was poured in the mold when the mold was at the temperature of the wax. He said he didn't think it was possible to produce a perfect surface, without air bubbles, owing to the churning action of the wax when being poured in, but he said, however, it would do no harm to carry out the experiment, inasmuch as I thought it could be done. I then took a regular mold which was used for the expanding process, a mold which had been discarded because it was damaged accidentally while in use. I used this damaged mold in order to avoid spoiling another good one. This mold I placed on a gas burner and kept turning it, heating from the outside until it produced a hissing sound when touched with the wet finger. I also had an ordinary hollow cast-iron core, known in practice as a shell and used as a form for shrinking the dipped duplicates. This mold and core I stood on end on an iron plate, the plate being cold. I centered the core inside of the mold as near as possible by judgment. I then poured in melted wax, that is wax such as

is used for making original records. The temperature of this wax was about 360 degrees F. I filled the mold to overflowing, and as it shrunk I added a little more to fill it up as best I could. When this wax and mold cooled sufficient to set, I took a wet towel, wrapping it around the mold to chill it. I also took a wet piece of waste and stuffed it inside the hollow core, to extract as much heat as possible and cool it. The core being cooled faster than the outer mold, owing to the fact that it was much thinner, was removed first, as the wax shrunk away from it. The mold containing the molded record was then allowed to stand until the record shrunk and loosened itself. This cylinder or molded master was turned over to Mr. Miller for his inspection. While it did not run very true on the phonograph, owing to the fact that there were no positive means for locating the core, still it could be reproduced from one end to the other, and satisfied Mr. Miller that the process was far superior to the expanding process upon which he had been experimenting. He then advised me to have suitable apparatus made whereby the core could be located centrally in the mold, which I did in a temporary manner. I again made several experimental records, which were also submitted to Mr. Miller for his inspection. They were made in the same way. Mr. Miller agreed to have a base and core made in one piece, carrying a ridge or flange on the outer edge of the base, in which the end of the mold was located. This apparatus was finished in the course of about a week. I then continued further experiments with various compositions of wax, with the idea in view of getting the proper shrinkage. This, we found could not be done with the molds we were then using, as the feed or pitch of the screw on the machine on which the original master was made from which

the mold was in turn made, was not coarse enough. Mr. Miller then caused to be made a feed screw for the photograph of special thread, the pitch of which was estimated according to the shrinkage of the wax, which we found to be most suitable for that purpose. This screw thread was 97 1/3 threads to the inch. We had records made by an artist specially on this thread. Molds were made from these records, which were called "mother molds." I molded records in these mother molds, which were in turn electroplated, thereby forming a duplicate mold. These molds being used in the same manner as the mother molds, with the exception that the commercial composition or wax was melted and poured in the mold, instead of the master-record wax. We found the shrinkage from these second molds to be near enough to 100 threads per inch to make it a commercial proposition. These several records, I believe, were submitted by Mr. Miller to the proper authorities for their judgment, and I heard nothing further on this particular subject for two or three weeks, during which time I continued to experiment by endeavoring to produce a record which would not break, by introducing fibrous material, first by saturating the fibrous material with the molten wax, then trying to force it into the molds, which was heated to about 300 degrees. This I found to be very impracticable. I then tried to use fibrous material in large pieces, instead of in finely divided state, such as blotting paper, strips of newspaper, strips of cheesecloth, and cotton wadding.

Q. 5. In Mr. Miller's testimony the molded masters, which you have testified to making, have been described to be made by what he calls the "hot process"; using this term to designate the process and confining yourself to master molds in which no material was used but the master wax, what work,

if any, did you do for Mr. Miller by the hot process after the first experimental work to which you have referred?

The first clause of the question is objected to as without proper basis of fact in the evidence. The question is objected to as irrelevant and immaterial.

A. I continued on these experiments.

Q. 6. Did or did not you thereafter make molded masters for Mr. Miller by the hot process, and if so, to what extent?

By defendant's counsel:

Defendant's counsel once for all reserves the objection to the term the "hot process" as indefinite.

A. I did make molded masters for Mr. Miller, as requested by him from time to time, according to his progress in making the molds from these masters.

Q. 7. What has been the history of that work since the time when you made such molded masters for Mr. Miller?

A. My experiments with the fibering process being quite promising I continued to work on it, using the same molds and also using the regular commercial molds, and introducing the different materials which seemed to be called for as the experiment progressed. I gradually worked along submitting samples to the proper authorities, until they thought it was a commercial record which would not break. During all these experiments I made, occasionally records for Mr. Miller by this hot process. We started making commercial records in building known as No. 10, at West Orange. I employed a number of men and boys to see what could be done by way of production in a commercial way. Mr. Miller continued to call on me to mold

master records for him from mother molds from time to time. The masters made from these mother molds were used for making commercial molds. There was about two selections out of the regular list of 25 per month, which were made in this way. They were shipped out with the regular work, in order to see if any complaints would come in, or if any one was able to distinguish them from the regular work. These records proving satisfactory to the National Phonograph Company, were ordered made on a larger scale and we set apart a special kettle and apparatus for that purpose, and Mr. Shannon, who was employed by me on the fibre records, was put in charge of the master molding by the hot process. After this I had nothing further to do with it, outside of advising Mr. Shannon as occasion required.

Q. 8. I call your attention to the Miller-Pierman patents in evidence. In the patent which is numbered 726,905 I direct your attention to the following language on page 2, in lines 72 to 81, which is as follows:

"While we have designed our improved process particularly for use in connection with the manufacture of composite records of the type invented by us, it will be understood that our process can be effectively carried out in the manufacture of records or blanks made wholly of wax or wax-like material by merely omitting the preliminary winding of a fibrous material around the core as explained."

Please state whether you ever used the mold and process of this patent for making molded masters.

Question objected to as leading in form and as calling for an incompetent answer since it is a conclusion of law as to what is the "process of this patent."

A. I did.

Q. 9. Explain the relation of this work to the work which you have said you did of making molded masters by pouring molten wax into a pre-heated mold?

Objected to as incompetent.

A. I might say that the first records I made were molded masters by pouring wax into a hot mold. I afterward had a core and base which was made in one piece, constructed in such a manner with three movable pins in the base of the core, so that when the mold was placed on the base of the core, both being heated, the mold being lowered into the melted wax, resting on the bottom of the tank, the pins will be forced up through the base of the mold, forcing the mold up. The mold resting on these three pins, left an opening between the base and the mold, the wax would run in from the bottom, carrying all air bubbles to the surface. Upon raising the mold by means of a handle, attached to the core, the mold would slip back in place, thereby forming a sort of a dipper containing the melted wax, which was then chilled by either dipping in a tank of cold water, or put in a spraying apparatus, and the record extracted as before stated.

Q. 10. How long did you leave the mold, base and core in the melted wax, and what was the approximate temperature of the wax?

A. The mold being previously heated to the temperature of the wax, which was about 300 degrees, it was only necessary to put it in or leave it in long enough for the filling to take place.

Adjourned for lunch.

Q. 11. In molding records in the way just described you heated the mold, core and base, before placing them in the wax, is this correct?

A. It is.

Q. 12. Was that your invariable practice?

A. It was not.

Q. 13. Explain any other way in which you molded records with the apparatus described in your answer to Q. 9?

Question objected to as irrelevant and immaterial, likewise as indefinite with respect to the time when any such other ways were practiced.

A. By putting the assembled mold and core into the melted wax, allowing it to heat up to the temperature of the wax, when it becomes as hot as the wax, the wax would flow in the mold itself; it is then removed and treated as before. When the assembled mold, base and core are first placed in the wax, the wax would congeal on it and would not flow in until the mold became hot enough to melt the wax which had congealed.

Q. 14. Please state, as briefly as possible, the order in point of time in which you molded records by pouring the wax into a mold already heated; by submerging a mold in wax and allowing the wax to flow into the mold through its bottom and by placing a mold, base and core in the wax, the core having a wrapping of material around it, such as blotting paper, cheesecloth, and the like, as you have testified, and as is disclosed in the Miller-Pierman patent. By this I mean to inquire the order in which these various things were developed.

A. First records were cast by pouring as described, and after I received the mold which was constructed in such a way that it would open automatically at the bottom by means of pins, I used the process for putting the cold mold into the wax and letting the wax heat it. The final manner in which this work was done, up to the time we

stopped using the process of combining cotton with the wax, we heated the mold and core by suspending it in the wax from suitable hooks which prevented the mold and core from touching the bottom of the tank. They were allowed to heat to the same temperature as the wax without any wax entering the mold. They were then transferred to the molding tank and immersed in the wax; when the mold and core touched the bottom of the tank the pins would raise the mold and allow the wax to enter the heated mold.

Q. 15. When, if you remember, did you begin making records having cotton wool, or fibre therein?

Question objected to as immaterial.

A. I should say about six or seven weeks before applying for a patent on it.

Q. 16. And, if I understand you correctly, you made molded masters or molded records by the various hot processes that you have described, that is to say, the various processes in which the hot mold is used, before the time mentioned in your answer to the last question?

A. I did.

Direct examination closed.

By Mr. MASSIE:

×Q. 17. You have spoken of Mr. Miller being the mechanical arm of you two, or perhaps Mr. Miller is the one who so testified. Are you the wax expert of complainant's laboratory?

A. I am not.

×Q. 18. Are you familiar with the various wax-like compositions employed by the complainants?

A. I am only familiar with them in their mixed condition.

×Q. 19. Is it the fact that complaints employ regularly three different compositions, namely, one

for making original records, to be engraved upon the talking machine; another composition for molding master records; and a third composition for molding the commercial record?

A. That is so.

x-Q. 20. What differences, if any, can you name as among these three compositions?

A. The principal difference is in the shrinkage.
10 x-Q. 21. Do you mean the difference in amount of shrinkage; or if in some other respect, what is it?

A. I mean the difference in the shrinkage due to the variable proportions of like materials used.

x-Q. 22. Do you mean they all shrink in the same manner, but one composition shrinks more than another and less than the third?

A. That has been my observation in practice.

x-Q. 23. Which of the three shrinks the most,
20 which next, and which least?

A. I can't state positively. At the time I conducted these experiments, in comparing the master wax with the commercial wax, the master wax shrunk the greater of the two. Since that time the compositions have been improved by suitable changes and I cannot clearly state the difference at the present time.

x-Q. 24. And how did the wax for originals compare, at the time of your observations, with either
30 of the other two, with regard to shrinkage?

A. I had no occasion to compare them any further than the two mentioned, as the wax used in the commercial blank cylinders was unsuitable for my use at the time.

x-Q. 25. Is it possible that you used the wax for originals in only the first one or two experiments which you reported to Mr. Miller; and thereafter used only the other two compositions?
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A. I should say, no.

x-Q. 26. I understand, however, that you found by your experiments that the wax which you employed in the first experiment (reported in answer to Q. 4) was not suitable for the purpose, and that you afterwards tried other compositions both separately and otherwise; and that it was ultimately decided that the wax such as used for making original records was unsuitable, so that a different composition was finally adopted. Is that correct?
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A. There were several samples of wax given to me for trial; the composition of which I know nothing about.

x-Q. 27. What were the results of your trials of the several compositions you have just referred to?

A. The results were that owing to the fact that we did not have molds which were made from records cut on a machine with the proper thread, the first records I molded shrunk to about 102 threads to the inch. It was not entirely due to the compositions used, as the wrong thread in the mold had a good deal to do with it.

x-Q. 28. Can you state the melting point of the composition used by you when you molded records by any of the processes set out in your direct examination?

A. I cannot.

x-Q. 29. In the course of your direct examination, for instance in answer to Q. 10, you have named the temperature of the wax as being 350 degrees, which I understand to mean Fahrenheit, did you read this temperature yourself, or how did you know what the temperature was?
30

A. In all experiments with wax, I invariably keep a thermometer in the melted wax, as should the temperature gradually rise above 450 degrees F., without my knowledge important ingredients would volatilize and thereby alter the composition.

x-Q. 30. Did you make any special note of the
40

temperature at which the wax became liquid, I will refer specifically to the first experiment reported in answer to Q. 4, where you had heated the changed mold on a gas burner, also to your answer to Q. 10?

A. In practice we do not refer to the melting point of the wax. It is assumed that the melting point and the point at which the melted wax congeals is the same. Therefore, we only note the congealing point.

x-Q. 31. Did you note the congealing point in the matters inquired of?

A. I did not.

x-Q. 32. In your various works and experiments, in connection with molding records, where your mold was either heated beforehand, or heated by its contact with the melted wax, did you observe what relation there was between the temperature of your molten wax and the temperature at which it would congeal? That is, was the congealing point only a few degrees below the temperature of the molten wax, or was it 50 or 75 degrees below, or was it even more than that?

A. It had always been my custom in molding experiments in the hot process to use the wax at least 70 degrees above the congealing point.

x-Q. 33. Can you state as a general proposition whether or not that rule is observed in the factory operations of complainants; or are you speaking solely for your own personal practice?

A. I am speaking of my personal practice.

x-Q. 34. Do you know anything as to the practice of the processes in complainant's factory? I refer, of course, solely to the proposition that in the so-called "hot process" of molding cylinder records, the wax is in practice raised to a temperature of at least 70 degrees F. above its congealing point.

A. I do not know what is used in the factory practice.

x-Q. 35. Why have you followed the custom as to temperature, which you state in answer to x-Q. 33?

A. In my experiments with the material at hand, the results seem to be the best under these conditions.

x-Q. 36. During what period approximately were you employed by the American Graphophone Company, and in a general way, what were your duties while there?

A. I went to work there in December, 1896, and I left their employ in March, 1901. My duties there were to establish a duplicating process, which I developed mechanically and had complete charge of up unto the time I left their employ.

x-Q. 37. Were you familiar with any molding operations carried on at defendant's factory, either of sound records or blanks?

A. I was familiar with both processes, one being carried on commercially and another one experimentally.

x-Q. 38. Please describe briefly the processes carried on commercially while you were there?

A. It consisted in molding blank cylinders for use on the duplicating machine, which was practically identical with that used at the Edison Works.

x-Q. 39. Melted wax-like material was poured into a smooth-bored metal cylinder, having centered therein a tapering core provided with a spiral groove; and after the casting became set it was ultimately removed from the mold?

A. That was it.

x-Q. 40. Please describe briefly the experimental process referred to in answer to x-Q. 37, as carried on at defendant's factory when you were there?

A. This experimental molding process consisted of electroplating with copper a record, the copper shell thus produced was placed in a so-called steam jacket. There was also placed inside of the mold a core, the melted wax was then poured in to fill up the mold. The steam was then turned on and circulated through the jacket, thereby heating the mold and its contents, after which the steam was turned off and allowed to escape by suitable means and cold water was allowed to flow in its place, thereby cooling the record. The record was then removed.

x-Q. 41. Wherein did this process you have just described differ from the process carried out by you with the damaged mold, as described in answer to Q. 4?

By Mr. Dyke: Question objected to as incompetent, it being the function of this witness to describe the various things which have been done and the function of the Patent Expert to make comparisons therebetween. The witness is not qualified as a patent expert.

By Mr. Massey: Defendant's counsel calls attention to Q. 3, but refrains the question as follows:

x-Q. 42. Wherein did the process that you observed at defendant's factory, and have referred to in answer to x-Q. 40, differ from the process which you referred to as carried out by you with the damaged mold?

By Mr. Dyke: Same objection.

A. The principal difference was that I heated the mold and core first.

x-Q. 43. What other differences can you name?

By Mr. Dyke: Same objection.

40 A. I used the gas flame to heat the mold and

core; I chilled the mold and core by contact with rags wet in cold water, and I got a good record.

x-Q. 44. I call your attention to complainant's exhibits, Miller & Pierman Patent, No. 725,965, and read the following passage, beginning at line 81 of page 2:

"We also wish to lay special stress upon that feature of our process consisting in molding a blank or record around a hollow core, having a spiral groove therein, because in this way we are able to successfully mold records or blanks having an integral internal spiral rib, and to remove the core from the finished article without injuring the latter."

Is this statement correct; that is, does this feature present the advantage there asserted?

A. It does, especially in combination with the wax and fibrous material.

x-Q. 45. It is true likewise when casting a record or blank composed entirely of the wax-like composition, though perhaps the advantage over other methods is not so marked as when fiber is embodied?

A. That is not the case.

x-Q. 46. Then is the statement quoted in x-Q. 44 true when casting records composed entirely of the wax-like composition?

A. There is no advantage in this feature, unless you use the fibre.

x-Q. 47. Who contributed the ideas quoted in x-Q. 44, you or Mr. Miller, or was it the joint production?

A. The idea of using a spiral thread was not originated at the time by either Mr. Miller or myself; it was taken from the regular practice of molding blanks and was considered an advantage, inasmuch as we could not gouge the grooves while the material was warm, owing to the fact that the reamer would rip out all the fibering we put in.

x-Q. 48. Who suggested or originated the incorporation of fiber, you or Mr. Miller, or was it a joint production?

By Mr. Dyke: Question objected to as immaterial, the Miller-Piernan patents not being in suit herin.

A. It was my invention.

x-Q. 49. Who originated the suggestion of having the mold at the temperature of the wax instead of being merely warm?

By Mr. Dyke: Same objection as to previous question.

A. I did.

x-Q. 50. At the time that Mr. Vanderwyt was working in the complainant's laboratory under Mr. Miller's direction, were molded records being made by complainants, in the way of regular course of business; and if so state locally, how such records were made?

A. The regular commercial records, as sold to the public at that time were molded by what we term in the factory the "slipping process," which consisted in taking a slightly warm mold, I should say not above 100 degrees F., and placing it in a water jacket, the water being sealed in the jacket, which was warmed by being immersed in a tank of water suitably heated by steam coils to about 100 degrees. This water jacket containing the mold was placed in a receptacle called the "can," and allowed to descend slowly into the melted wax by means of an air chamber having a piston therein, the air escaping slowly, allowing the piston carrying the mold to gradually descend into the wax. It remained there, I should say, about two minutes, the time being controlled by a clock, which started when the mold began to descend and ran for a specified prearranged time, when it would automatically, by electrical contact, light a

red incandescent lamp, which was a signal to the operator to raise the mold out of the wax and pass it over to the next man in the crew, who looked after the extraction of the record from the mold.

x-Q. 51. In the first sentence of your answer to Q. 7 you refer to trying different materials. What classes of materials are you there referring to?

A. Various wax-like compositions, which were given to me in a mixed condition.

x-Q. 52. I call your attention to Q. 9, which does not seem to be directly answered. Is there any relation between the work referred to in the previous question (Q. 8) and the work you did in making molded masters by pouring molten wax in a pre-heated mold?

By Mr. Dyke: Counsel for complainants desires to explain that at the time the question referred to was asked the witness, it was explained to him of the record that the relation inquired about was intended to mean merely the relation to time and the answer which the witness gave was with this understanding.

The question as now put apparently calling for a comparison between the two processes and an identification of the similarities and differences is objected to as calling for an incompetent answer, as the witness is not qualified as a patent expert.

A. The difference is that in one case the wax is poured in the top by hand, and in the other case it entered by way of the bottom by automatically raising the mold.

x-Q. 53. You have referred to your work in connection with the apparatus disclosed in the Miller & Piernan patent, and have stated that by means of this apparatus you had mottled sound records wholly of wax or wax-like materials (fiber being omitted). You have also referred to the

process you observed at defendant's factory, of molding sound records experimentally. What differences did you observe between these two processes?

By Mr. Dyke: The objection is made that this question is incompetent, since it calls for a conclusion, and the witness has not qualified as a patent expert.

By Mr. Masse: The witness is asked in the question to state what differences he observed in the actual carrying out of the two processes. He is asked for facts and the question is regarded as proper.

By Mr. Dyke: When the witness had finished describing the two processes as practiced, he had stated all that he knew as facts. A comparison between these things necessarily involves a conclusion and the objection must be insisted upon.

By Mr. Masse: Had the last question asked the witness to point out the differences between the disclosures appearing on the record, there might be room for the objection. The question asked the witness to point out the differences between the things he actually saw, some details of which may not be included in the answers already given.

By Mr. Dyke: The objection is that comparisons involve conclusions as a matter of necessity, and complainants' counsel cannot see any difference between comparing any two written descriptions of things which he saw and comparing the things described.

A. I firmly believe that I have stated the difference. I will state, however, that what I observed at the Graphophone works was simply pouring melted wax into the space between the mold and the core; that I did on my first experiment because

it was the handiest way to do it, of which I was aware at the time, and because it was necessary to get the wax in somehow. The method of allowing the wax to enter at the bottom was simply an improvement over the pouring method by hand in order to save time. It made no material difference in the finished product.

x-Q. 54. Would there be less tendency to entrap air bubbles if you flow the material in from the bottom?

A. No, providing the mold was the proper temperature.

x-Q. 55. Please compare, as well as you can, the temperature of the mold and of the wax, in each of the two instances inquired of?

A. The temperature of the wax in the Graphophone instance was not known to me, other than the fact that it was in a molten condition; the mold might have been considered slightly warm, but could not be considered hot by any stretch of the imagination. In the case of my experiments, I always endeavored to have the temperature of the mold equal to that of the wax.

x-Q. 56. In referring to the temperature of the mold at the Graphophone factory, which you say might have been considered slightly warm, etc., are you speaking of the temperature before the wax had been introduced and before the steam had been introduced into the surrounding steam jacket?

A. No.

x-Q. 57. Do you mean that after the steam had been introduced into the jacket surrounding the mold, and after the molten wax had been poured into the mold, that according to your understanding the mold could not be regarded as substantially more than slightly warm?

A. I refer to the temperature of the mold and jacket at the time the wax was poured in.

x-Q. 58. I understand you to mean, without referring to the temperature of the mold before the wax is put in, and without referring to its temperature after the wax and the stems have been admitted, you mean that at the very moment the wax was poured in, the mold was only slightly warm?

A. That is correct.

10 Signature and certificate waived.

March 6, 1908.

Met pursuant to adjournment.

Present:

FRANK L. DYER, Esq., for complainants.

C. A. L. MASSIE, Esq., for defendant.

20 ANTHUR S. BROWNE, a witness produced on behalf of complainants, having been first duly sworn, deposes and says, in answer to questions propounded by Mr. Dyer, as follows:

Direct examination by Mr. DYER:

Q. 1. Give your name, age, residence and occupation?

A. Arthur S. Browne, age 47; Washington, D. C.; patent solicitor and expert.

30 Q. 2. What experience have you had qualifying you to testify as an expert in reference to patents for inventions, and particularly in the phonographic art?

A. I was graduated from Dartmouth College, Hanover, N. H., in 1881, and in the following year I entered my present profession, in which I have since been actively and continuously engaged. I have prepared and prosecuted many hundreds of applications for patents; and I have made numerous investigations into the literature of various

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arts for the purpose of giving opinions concerning the novelty of inventions, and the scope, validity and infringement of patents. I have frequently visited workshops and factories for practical information. I have frequently testified as an expert witness in patent suits, having testified in about two hundred such suits. I have been familiar with the phonographic art for about fifteen years, and I have testified in a number of suits in which phonographic patents were in suit.

Q. 3. Have you read and do you understand the specifications of the three patents in suit?

A. Yes.

Q. 4. Have you read the testimony heretofore taken in these suits, and have you examined the various exhibits which have been offered in evidence?

A. Yes.

Q. 5. Are you familiar with the manufacture of duplicate sound records as at present practiced by the complainants in these suits?

A. Yes.

Q. 6. Please outline that mode of manufacture? A. The manufacture of sound records involves the following:

(1) Making the blanks on which the sound groove is to be made.

(2) Making the sound groove in the blank.

30 (3) Making a master, mold from this sound record.

(4) Making duplicate master records from the master mold.

(5) Making other molds from the several duplicate masters.

(6) Making the commercial duplicate sound records from the duplicated molds.

40 These duplicate records are sold to customers who use them on a sound reproducing machine to

reproduce the sounds which were previously recorded in the blank.

These several operations can conveniently be described under appropriate headings in sequence.

BLANK-MARKING.

A suitable blank composition is heated until it is in a fluid condition. It is a "soap composition" such as was first set forth in the Edison patent No. 430,374, June 17, 1890, (application filed July 30, 1888), this being subsequently developed to 10 30 30
 this being subsequently developed to this melted soap composition is poured into the cylindrical space between the mold and its core substantially as illustrated in the Edison patent No. 414,761, November 12, 1889, (application filed August 10, 1888), as here illustrated, the outer cylindrical mold has a smooth interior surface, and the core has a spiral groove. When the material poured into the mold is still in a soft and semi-plastic condition, the cylindrical outer mold is pulled off, and the spirally threaded core is unscrewed. This leaves the blank with a rough outer surface, while the interior has a spiral rib as illustrated in Fig. 2 of this Edison patent No. 414,761. On account of the rough outer surface, the molded blank is unfit for immediate use. When cold, its outer surface is shaved off by means of a small lathe, so as to leave the exterior surface perfectly smooth and cylindrical. Also the interior spiral ribs are shaved so that they may exactly fit the rotating mandrel of the sound receiving machine. The soap composition of which this blank is made is of a character to be readily grooved in the sound recorder.

RECORDING SOUNDS.

The blank is then placed on the mandrel of the sound recorder or phonograph, and a popular singer, speaker or well-known hand performs in the 40

vicinity, with the result that music or speech is recorded in the blank. The fundamental characteristics of the sound recorder are those disclosed in Edison's original phonograph patent No. 200,521, Feb. 19, 1878, (application filed Dec. 24, 1877). As here shown, a rotating cylinder or mandrel A, carries the surface in which the sound record is to be made, and in the vicinity is a diaphragm or membrane B, which is set in vibration by sound waves and which carries a stylus which makes a sinuous record in the blank. As the mandrel rotates, it moves lengthwise, so that the resulting sound groove is a spiral around the blank and sinuous, or up and down with respect to its surface. These fundamental principles are those of the modern phonograph, of course, much improved in detail during the years which have intervened; the sound groove being now cut or plowed out by a cutting or engraving stylus, which plows through the soap composition of which the blank is composed; and the stylus, with its diaphragm traversing lengthwise of the mandrel instead of the mandrel moving endwise, as described in Edison's British patent, No. 1644, April 24, 1878. The result is to cut a spiral groove in the surface of the blank, this groove having up and down undulations, depending in shape, depth and frequency upon the character of the sounds produced in its vicinity.

This sound groove is of delicate character. The groove is less than one one-hundredth part of an inch in width and its variation in depth is still smaller. Yet, the faithful reproduction of the impressed sounds demands that there should be no disturbance of this sound groove.

This "master" record can be used directly for reproducing sounds, but is unsuitable because its soft characteristics which render it easily cut re- 40

sult in it being quickly worn out by repeated use in the sound reproducing machine. As the phonograph business is now developed, its chief use is for entertainment and amusement, and hence a large number of duplicates must be readily and economically made. The artist who is engaged commands a large remuneration for a single song, and if only one sound record could be made for a single singing, the expense would be prohibitory. The other steps of manufacturing have to do with the making of duplicates of this record.

MOLD-MAKING.

A cylindrical metal mold is made from the master record by an electro-plating and typing operation, so as to produce a metal mold like that shown in "Complainant's Exhibit, Commercial Joyce Apparatus." An inspection of this mold shows it has on its interior surface irregularities forming the sound grooves in the master records, except that they are just the reverse, there being projections in the metal mold, where there are depressions in the master record. The process of making this metal mold involves the destruction of the master records, which is broken in pieces, in order to get it out.

MAKING DUPLICATE MASTERS.

The master mold just described might be directly used for making commercial sound records for the market. This would, however, be too slow, since only one duplicate could be made at a time; and, moreover, as common workmen are employed in making the duplicates, if there were but this single master mold, any injury to it would undo all the previous work which has involved the original expensive artistic performance. Accordingly, the procedure is to make a sufficient number of "duplicate master" records from the master mold, special care and attention being given to this opera-

tion to avoid injury to the master mold, which is then carefully preserved for further use in case of need. As many duplicate masters are made, as the assumed popularity of the composition demands, a dozen being a customary number. These duplicate masters are made in accordance with the Joyce patent in suit, No. 831,655, September 5, 1906, (application filed October 13, 1897). For this operation there is an interior core and attached bottom, as shown in "Complainant's Exhibit, Commercial Joyce Apparatus," and a detachable cup ring in addition to the metallic master mold. These parts are heated in a small gas furnace. The proper temperature is determined by the attendants in a crude way by moistening the finger and by touching the exterior surface of the mold in just the same way that a woman tells whether her flat-iron is hot enough. On one occasion, I, myself, endeavored to ascertain the temperature by stopping the attendant just before he was going to fill the mold and inserting a thermometer into the space between the mold and the core. The thermometer indicated 249 degrees F. As it took several minutes for the thermometer to reach its highest point, there would probably have been some cooling of the mold, so that a minimum estimate of 250 degrees F. for the working temperature would be about right. The mold being thus heated, the record composition is dipped from its molten bath and is poured into the mold. The composition is substantially the same as that used for making the commercial records, and is, I understand, substantially the composition of the Aylsworth patent No. 782,376 of Feb. 14, 1905, (application filed November 3, 1902). This composition presents a much harder surface than the blank composition, so that it can resist wear for a long time, so that a sound record made therefrom can be used for a great many successful repetitions.

After the composition has been poured into the mold, the mold is dipped into cold water, where it is allowed to remain for a short while. While the molten material is still in a soft semi-plastic condition, the mold is removed from the water; the core is pulled out, the cap ring is removed; the surplus material which was within the cap ring is cut off; and the interior is reamed out to the proper size and shape. This reaming out of the interior is done while the record material is still warm and within the mold, as is set forth in the other two patents in suit, Nos. 683,615 and 683,676, both of October 1, 1901, except that no concentric ribs are formed on the interior, since these duplicate masters are not intended for use on a sound reproducer. The metallic mold with the warm duplicate record still within it is then placed within a cooling jacket through which cold water circulates, the hollow interior of the enclosed record fitting over a metallic supporting sleeve. The cooling is continued until the duplicate record has shrunk away from the interior irregular surface of the mold. The mold is then lifted endwise off; and the duplicate record still on the interior supporting sleeve is then placed to one side until thoroughly seasoned, when it is removed from the supporting sleeve and is ready for further use.

As many of these duplicate masters are made as are necessary, say a dozen for an ordinary performance.

MAKING DUPLICATE MOLDS.

The dozen duplicate masters are then used for making as many duplicate metallic molds. These are made just the same way as original or master molds; the making of each duplicate mold involving the destruction of the duplicate master record, which has to be broken to get it out. As a result of this operation, a dozen duplicate metallic molds

with sound irregularities on the interior of each are made, all being just alike.

COMMERCIAL SOUND RECORDS.

With this dozen metallic molds, the commercial sound records are produced in large quantities for the market, all with the same song, speech or instrumental music impressed therein. These duplicate commercial records are made in substantial accordance with the method set forth in Miller & Lybworth patent in suit, No. 683,615, Oct. 1, 1901, (application filed July 31, 1900). This patent has already been so fully explained by three different witnesses that it is unnecessary for me to say anything further. By this mode of procedure duplicate sound records are turned out in large quantities and as most of the steps are such as can be performed by unskilled workmen, they can be profitably sold at a low price.

Each duplicate record is hard and durable; it has on its exterior a perfect reproduction of the sound groove of the original master record, so that it can reproduce the music with the same faithfulness as an original master record; and its outer surface is perfectly cylindrical so as to co-operate to the best advantage with the sound reproducing machine, while its interior with its concentric rib exactly fits the reproducer, and is exactly concentric with the cylindrical surface. All this is secured with the minimum quantity of material, since the internal concentric ribs above contact with the mandrel of the reproducer and the rest of the record is reamed out as far as the ultimate desired strength permits.

SOUND REPRODUCTION.

The sound reproducing machine is substantially a duplicate of the sound recording machine except that it does not have a cutting style, but a rub-

bing style which tracks in the sound groove without removing any of the material. This reproducing style is made of a jewel, such as sapphire as set forth in the patent of Edison, No. 481,581, October 18, 1892, (application filed May 27, 1890), this having the requisite smoothness, the hardness to resist wear and not being affected by moisture or the material of the sound record.

10 The steps necessary, therefore, to get the commercial records ready for the market are elaborate and those which the exigencies of this peculiar art demand.

Q. 7. Please trace the history of the art of recording and reproducing sounds preceding the filing of the application of the Joyce patent in suit, October 13, 1897, so far as the same may be material in showing the important steps taken?

20 A. The art originated with Mr. Thomas A. Edison, who in 1877 made the first machine capable of recording and thereafter reproducing sounds. This machine he called the "phonograph" and it is described in his patent, No. 200,221, February 19, 1878, as stated in the preceding answer. In this machine the recording is done through the indentation of the foil by means of the sound vibrating stylus; and the reproduction was done on the same machine without any intervening handling of the tin-foil, except the restoration of the mandrel to the starting point. Few inventions have created the widespread interest which followed this invention of Mr. Edison. It was a sufficient marvel that sound could be reproduced at all. Experience, however, with the original phonograph demonstrated that the foil was an unsuitable recording material, and that indentation was an inadequate method. In spite of its pliability, the tin-foil was distorted during the indentation; successive reproduction soon produced additional distortion so that sounds soon be-

came unrecognizable; and the tin-foil could not be successfully removed from the machine on which it was indented for subsequent use on another machine.

Accordingly, effort was directed toward the production of a suitable recording material and the proper way of getting the sound record in it.

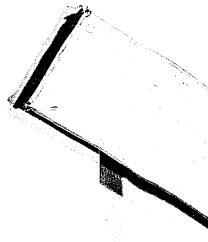
The first important improvement in the art is set forth in the patent of Bell & Tainter No. 341,214, May 4, 1886. This describes a sound record blank composed of a foundation of pasteboard, with a surface coating of lac wax and paraffine; this composition being referred to as "waxlike" to identify its characteristics. This patent also describes the cutting or engraving method of making sound records by engraving or cutting out the material of the blank by a cutting or engraving stylus vibrated by sound waves. This cutting or engraving method is the one which has since been commercially used.

The Tainter patent No. 341,288 of May 4, 1886, illustrates the modern form of recording and reproducing machines, in that the recording and reproducing style moves endwise of the blank or sound record during its rotation, as in Edison's British patent No. 1644, April 24, 1878; and describes the customary relation between the style and the record surface in order that the reproducing style may "track" or follow the sound record.

The Edison patent No. 414,761, November 12, 1889, shows the molting of the blanks to be used for recording purposes.

The Edison patent No. 436,274, June 17, 1890, describes the blank composition as being a "soap composition," the improved and modern soap compositions being the outgrowth of this original suggestion.

The Edison patent No. 484,584, October 18, 1892, describes the jewel reproducing style.



The importance of duplicating the sound records was early appreciated. In Mr. Edison's British patent upon the phonograph, No. 1644, April 24, 1878, several plans are suggested for making duplicate records. The plan which was commercially used prior to the application of the Joyce patent in suit was embodied in these early suggestions.

As shown in Fig. 59 of this British patent, (describing beginning at line 38, page 10) one indented sound record was to be used for indenting a blank through intervening mechanical duplicating devices. This was the principle of duplication which was commonly employed prior to the invention of the Joyce patent in suit. Such mechanical duplicating apparatus is shown in the patent to Macdonald No. 559,806, May 12, 1896, (application filed December 4, 1895). There is shown in this patent two parallel, equally rotating mandrels, one of which has a master record with a sound produced groove in it, and the other has a blank on it. Connected by suitable mechanical connections are a reproducing style which follows the sound groove in the master record, and the cutting style which cuts a corresponding sound groove in the blank. This method of mechanical duplication was that which was practically employed prior to the Joyce invention. In fact, this patent of Macdonald (who I understand, has testified as a witness in this suit on behalf of defendant) shows that just prior to the Joyce application, inventors were still at work trying to improve mechanically duplicating machines. Such mechanical duplication is inefficient, since it rapidly wears the master record, and the duplicate records must be made of material soft enough to be readily cut and hence lacking in durability and not susceptible of a great many repetitions.

The Joyce patent in suit contains the first disclosure in the art of a practicable method of mak-

ing duplicate sound records by a casting operation.

Q. S. In your last answer you have referred to Mr. Edison's British patent of 1878, containing several suggestions as to the duplication of sound records. Please refer to these suggestions; and also state if between that date and 1897, when the application for the Joyce patent in suit was filed, there was any other suggestion made in patents for duplicating sound records?

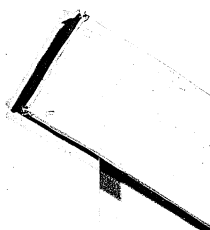
A. In addition to the mechanical duplication suggested in Mr. Edison's British patent No. 1644, April 24, 1878, it suggests other plans.

One suggested plan is to obtain a metal cylinder by an electro-type process from the original master for the record, this cylinder having the sound irregularities on its exterior. The suggestion then is to use this in connection with an opposing roller to indent "strips or sheets of foil or rollers to produce copies." This is described at lines 24-27, page 10, and is illustrated in Fig. 60 of the drawings.

Another plan is to use a similar roller of metal with the sound irregularities on the exterior surface "so as to knock or indent" the phonogram in a roller of soft metal that is to be pressed against the roller 42 that has the sound irregularities; as shown in Fig. 61 and described at lines 28-30 of page 10.

Another suggestion is to make a split or divided mold, shown in Fig. 62, with the sound irregularities on its interior, duplicates to be made by filling the mold with Plaster-of-Paris when moist, the mold being opened when the Plaster-of-Paris is dry to permit it to be removed. The duplicate record would thus be a Plaster-of-Paris cylinder. This is described at lines 30-35, page 10.

It was also suggested that after making a metallic reproduction by electroplating, such metallic re-



production can be "used for impressing strips or pieces of metal" (page 16, line 48).

All or nearly all of these suggestions have given rise to numerous attempts to carry them out by different inventors.

Mechanical duplication, either through direct mechanical connections or pneumatically is set forth in the following patents:

Douglass No. 475,490, May 24, 1892.
 Bettini No. 488,381, Dec. 20, 1892.
 Amet No. 539,212, May 14, 1895.
 Amet No. 545,439, Sept. 3, 1895.

The Tainter patent No. 341,287, May 4, 1886, suggests the making of a duplicate record in metal by electroplating.

The Edison patent No. 481,582, Oct. 18, 1892, (application filed Jan. 5, 1895), is a development of the divided mold as suggested in the British patent of 1878. It obtains a cylindrical metallic mold through an electroplating process, and then splits it longitudinally "up a very thin saw into a number of parts—say, for illustration, three parts—which are suitably mounted upon levers, so that a mold is formed which can be closed to receive the material to be molded and opened to permit of its being taken out." (Page 1, lines 69-75.) This split mold is then to be used as follows:

"The duplicate phonograms are produced by means of this mold by pouring therein and preferably around a suitable core placed in the mold, suitable substances, such as wax, or wax-like material, resin, or plaster-of-Paris, the material being preferably too hard to be satisfactorily indented by the phonograph, or the duplicate phonograms may be made by taking sheets of smooth material, like waxed paper or tin-foil and pressing them upon the surface of the mold by a plunger or otherwise, the sheets

being afterwards backed up by a wax, resin, or cement." (Page 1, lines 75-88).

This plan is wholly impracticable. It is impossible to make a satisfactory sound record in a split mold. The splitting of the mold necessarily involves the removal of some of the metal containing the sound record, thus destroying some of the sound waves, and the molding of the material in such a mold inevitably results in fins or burrs in case the material is in condition to fill the very fine irregularities which constitute the sound record.

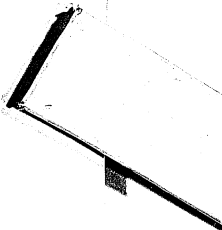
I call especial attention to this patent because I shall refer to it later.

The Edison patent No. 382,419, May 8, 1888, attempts to carry out the knurling suggestion of the 1878 British patent. In accordance with this, through electrotyping a flat metal surface is to be obtained, having the sound record thereon, and over this is to be rolled under pressure a wax-like blank to receive an impression of the sound record.

Herrington No. 399,264, March 12, 1889, proposes to make duplicates by impressing tin-foil backed up by a softened material against an indented tin-foil record.

Herrington patent No. 399,265, March 12, 1889, proposes a knurling operation resembling that of the Edison patent No. 382,419.

The Linnel patent, No. 528,373, Oct. 30, 1894, proposes to make celluloid duplicates. A metallic matrix cylinder or mold is formed by electroplating from a musser record. A celluloid sleeve is then introduced inside, and mold and celluloid are then plunged in the hot water so as to soften the celluloid, which becomes plastic at about the temperature of boiling water. A mandrel is then inserted inside the celluloid ring, so as to forcibly expand the then plastic celluloid and force it into intimate contact with the inner sound groove or surface of



the matrix cylinder or mold. The mold and celluloid sleeve are then plunged into cold water and the specification says that the celluloid thus "recovers its hardness and is at the same time generally contracted sufficiently to permit the easy withdrawal of the ring C from the mold A" by unscrewing it therefrom. If, however, the contraction of the ring C in this way is not sufficiently greater than that of the mold A, the mold may be slightly warmed by heat externally applied." (Page 2, Hues 108-115). It will be noted that Lloret does not get sufficient separation to slip the celluloid duplicate out endwise, but only sufficient to free the two, so that the celluloid duplicate can be unscrewed from the mold, the unscrewing being permitted by the spiral character of the sound record.

The British patent to Young No. 1475 of Jan. 23, 1894, describes a process similar to that of Lloret, except that Young apparently found that the celluloid sleeve could not be removed from the mold by unscrewing since he describes using a very thin celluloid sleeve, so that (after the sound record has been made in it by pressure) it can be collapsed or bent so that it can be withdrawn from the mold.

These instances show that numerous attempts were made prior to Joyce to get duplicate records, and that the impertinence of doing so was widely appreciated. Yet, the ultimate outcome of the endeavors of the inventors prior to Joyce is exhibited in the Macdonald patent No. 559,806, May 12, 1896, which sets forth an improved form of a mechanical duplicating machine.

No one prior to Joyce had suggested making duplicate records by casting molten wax-like material in a heated continuous unbroken mold, the wax-like material being of a character which would shrink away from the mold on cooling without injuring or distorting the perfection of the sound record cast

in it, such shrinkage permitting the endwise separation of mold and finished record.

Q. 9. Mr. C. A. L. Massie, defendant's expert, as I understand him, finds no novelty in the subject matter of claims 3, 4 and 6, of the Joyce patent in suit No. 831,008, in view of the prior state of the art, discussed by him. Please state whether or not you agree with Mr. Massie, giving your reasons.

A. I do not agree with Mr. Massie.

In preceding answers I have already considered all of the patents earlier than the Joyce application relating to the phonographic art, which have been discussed by Mr. Massie, with the exception of the Edison patent No. 382,462, May 8, 1888, which simply describes a blank said to be made by molding, but containing no suggestion of how the molding was done. Possibly it was done in the manner described in Edison patent No. 414,761, Nov. 12, 1889, to which I did refer.

So far as the phonographic art is concerned, there is nothing to even cast a doubt upon the substantial novelty of the process of the Joyce patent in suit, as the same is defined in claims 3, 4 and 6. The history of the phonographic art shows that from its very beginning, in 1877, and throughout the period of 20 years following until Joyce filed his application in 1897, numerous inventors in the phonographic art were struggling with the problem of getting duplicate records, and that the mechanical duplicating machines were the outcome. The Joyce invention represents a turning point in the art. Practically, the old method has been superseded, and commercial duplicate records are today made by casting molten material in a continuous mold.

It remains, therefore, only to consider what bearing, if any, the instances in extraneous arts have to which Mr. Massie refers.

On exploring the fields of other arts, having

nothing to do with the reproduction of sounds, and apparently foreign and remote thereto, numerous plans will be found for making articles having varied or irregular or ornamental contours.

A common plan is to have a mold or die with the reverse of the desired configuration and to press or force the material into the mold or die. This is the method commonly employed when extreme delicacy is required in their production. For example, this method is employed in the stamping of coins, which in classical times were frequently cast. As the surface to be reproduced in a sound record is of extreme delicacy, minute variations being of vital importance, it would seem *a priori* probable that this would be an effective method of making duplicate sound records. In fact, this method was suggested in Mr. Edison's British patent of 1878, the "knurling" process therein suggested by him consisting in the forcing or pressing of material against a hard surface having a reproduction of the sound record. Numerous other attempts in the same direction are shown, among the instances which I have cited in the next preceding answer, such being the proposed plans of the Lioret patent No. 528,273 and of the Young British patent of 1894.

Probably the best known and most universally employed method of making articles with irregular contour is by casting in a mold, the completed articles being removed by destroying the mold. This is the common way of making iron castings. The mold is commonly made of sand, shaped around the pattern and in various sections. The mold sections are then brought together, the molten metal is poured in; and after the cast is completed, the sand mold is destroyed, thus exposing the cast article. This involves the destruction of the mold for each article cast; and, obviously, is wholly inapplicable to the production of duplicate sound records, since

the mold must be used over and over again, if there is to be any utility in the process. So far as I am aware, no one has ever proposed to make duplicate sound records by this process which is the most common of all in the art of making duplicate articles.

Another exceedingly common plan of making articles of irregular contour is by the use of divided or split molds, which can be used over and over again and when the temperature or other characteristic of the material to be molded is such as not to endanger the mold. This is the plan commonly employed when castings are to be made of soft metals, like lead, and alloys in which lead is an element. Glassware is made in the same way, particularly when the flow of glass is aided by blowing. Latheing on glass bottles is thus produced. Evidently, this method is so common that it could not have escaped the attention of those desiring to make duplicate sound records. Attempts to use such method are shown in the Edison British patent of 1878, which suggests making a Plaster-of-Paris cast in a split mold; and in the Edison U. S. patent No. 484,382, Oct. 18, 1892, which also suggests the use of a split mold. I have already commented on the impracticable character of any such plan for making duplicate sound records.

Manifestly, the making of a sound record by pressure is not applicable to materials which must be rendered fluid before they can effectively conform to the sound record surface, nor can casting in a mold which must be destroyed, nor in a divided mold, be feasibly carried out.

But, so far as I am aware, or so far as the record discloses, these were the only known ways in the art of making duplicate articles having irregular surfaces or contours produced as the result of the casting, molding or pressing methods.

It is significant that in no art to which reference has been made by Mr. Massie, is there any instance prior to the Joyce application of casting any article whatever in a continuous mold having an irregular unsymmetrical molding surface; and, especially is there no instance in any art where the material for the duplicate is brought to a molten condition and the mold itself is hot, when the molten material is free to flow into all of the irregularities of the mold which are to be faithfully reproduced.

Adjourned until 10 A. M. March 6, 1908.

March 7, 1908.

Met pursuant to adjournment.

Present:

Counsel as before.

The examination of the witness ARTHUR S. BROWNE is continued by Mr. Dyer. The witness here continues his answer to Q. 9.

But, Mr. Massie refers to patents and publications describing the molding of candles and of inking rollers for printing presses, which are heated and into which the material to be molded is introduced in a molten condition. It is significant, however, that in making candles and inking rollers, the interior of the mold is always smooth, and no attempt has ever been made to use a mold having an irregular unsymmetrical molding surface for the purpose of making a candle, or an inking roller with an irregular unsymmetrical surface. On the contrary, it is important in both the candle and inking roller art that the candles and rollers should have smooth symmetrical outer surfaces. The molding of candles is a great antiquity. Groves & Thorp (Vol. II., page 69) state that "Mold candles are said to have been introduced by the Sieur de Brez, in the

eighteenth century." Although, this art is thus nearly half a thousand years old, nevertheless, Mr. Massie has not referred to a single instance wherein the known methods of molding candles have ever been utilized for the molding of articles which are to have irregular unsymmetrical surfaces. The obvious inference is that the conditions surrounding the molding of candles are such as to inevitably lead any experimenter away from the attempt to use such matters where irregular surfaces are to be obtained as a result of molding. Manifestly, the art of molding candles is remote and foreign to the art of reproducing sounds; and the circumstance that five hundred years' experience in molding candles has never resulted in obtaining a molded irregular surface in any art, would *a priori* have prevented any experimenter from attempting to use candle methods. Moreover, the history of the phonographic art shows that candle-making never did suggest any improvement in making sound records, although for twenty years an efficient plan was actively sought.

A brief consideration of molding candles will show its utter inapplicability to suggest any available steps in making sound records. In considering the making of candles I will refer not only to the patents and publications mentioned by Mr. Massie, but will also refer to other authorities. Mr. Massie has referred to the following publications:

Groves & Thorp, Chemical Technology, 1895.
The Scientific American Cyclopaedia 1893,
Soaps and Candles, Jas. Cameron, 1896.

In addition, I will refer to the following publications:

Brann's, Manufacturer of Soaps and Candles,
1888;
Carpenter, Soap and Candles, 1885;
Ott, Soap and Candles, 1867.

The various publications and patents on candle making show the impossibility of utilizing the same method for all sorts of candles. Some candles can be molded and others can not. Those candles which can be molded require different treatments, depending upon the material employed. Moreover, the molds have special characteristics which would be impossible in molding sound records.

10 Referring to the characteristics of the molds, Ott says (page 161):

"For moulding, besides the common metal molds (a mixture of tin and lead), molds of glass are sometimes used. The former are slightly tapering tubes, varying in length and dimensions according to the size of the candle to be manufactured, and, when required, are arranged in regularly perforated wooden frames or stands, with the smaller end downward, forming the upper or pointed part of the candle."

20 As here stated, the metal molds are made tapering, which obviously facilitates withdrawal as well as giving a desired shape for the candle. Manifestly, a tapering mold which will facilitate withdrawal is an impossibility in making duplicate sound records, since the mold must conform to the original master records, and that is a cylinder.

30 Also, Brant (page 587) says:

"The molds are narrow, somewhat conical, tubes, highly polished internally, in order to impart a smooth surface to the candle. They are bored out by machinery, so that the interior shall be perfectly true. * * *. The molds made in this country are of a better form, and they are furnished by a vertical instead of a rotary motion, which makes the candles easier to remove."

40 Thus, it appears that ready removal of the candles is dependent not only on the tapering or

conical form of the mold, but also upon the polished interior thereof, so much so, that a difference is appreciable in favor of polishing up and down, instead of round and around. Manifestly, no such burning up and down is available for the inside of a sound record mold to facilitate the removal of the cast record, since the essence of the mold is that it should have an irregular molding surface corresponding to the original irregularities of the master record. The teachings of the candle molding art with respect to the molds are, hence, such as to suggest its total unavailability to making duplicate sound records.

I have already stated that in spite of five hundred years of molding candles, nevertheless there are some candles which even now cannot be molded. Groves & Thorp, referring to the early use of candle molds, (Vol. II, page 69) says:

30 "Wax does not lend itself to molding, hence the process was applied to tallow alone." This same treatise referring to the Binns' machine of 1801, (page 89) says:

40 "A somewhat strange claim of Binns in connection with this apparatus is his asserting its applicability to the manufacture of beeswax candles, which, in effect, lend themselves most reluctantly to machine production. Possibly the wish was father to the thought, that in the contrivance for applying alternate heat and cold to the molds, the beeswax might show itself readily of extraction therefrom. Be this as it may, even with the machines of to-day beeswax cannot be molded satisfactorily, and the means and appliances for this branch of the candle-maker's art are the same now as they were 200 years ago or more."

50 Other authorities refer to the same fact. Brant (page 618) says:

"Wax having the property of greatly shrink-

ing after cooling and tightly adhering to the walls of the mold, is not a very suitable material for molding. In fact, the molding of wax-candles is now rarely, if ever, performed, but if executed is done in precisely the same manner as prescribed for stearine and paraffine candles.

Cameron (page 269) says:

10 "Wax is not well adapted for molding, on account of its tendency to adhere to the mold, and its great contraction on cooling."

Carpenter (page 278) says:

"Pouring is used only with wax candles which cannot be molded for the candles refuse to leave the molds, or crack while doing so."

20 According to these authorities, wax has a peculiar behaviour. Although it shrinks in solidifying, yet it seems that it shrinks in a peculiar manner, since it tends to cling to the interior of the mold and away from the center, where the wick is located—it being usual in molding candles to have the wick in place centrally within the mold and the candle material, being poured around it. Wax does not appear to be the only candle material which acts in this unexpected manner, since Brantt in describing the molding of spermaceti and paraffine candles (page 616) says:

30 "The moulding is executed in essentially the same manner as stearine candles, only the spermaceti must be so hot, about 140° F., that the portion congealing on the sides of the mold, the first moment on pouring in the mass, becomes again fluid. In cooling spermaceti contracts to such an extent that deep cavities are formed around the wick, which have subsequently to be filled up."

40 Although the spermaceti molds are externally chilled, nevertheless the spermaceti in contracting

shrinks outwardly toward the mold and away from the wick requiring subsequent refilling around the wick.

Indeed, I fail to find in any of the literature which I have examined concerning candle-making, any intimation whatever to the effect that any candle-making material would in cooling, shrink radially inward away from the mold so as to facilitate easy removal. On the contrary, the descriptions all infer a forcible expulsion, and special constructions of the mold (such as tapering form and lengthwise polish of the material) or special manipulation to get the chilled candles out. For example, Groves & Thorp (Vol. II., page 81) speak "of ramming the candles out of the molds"; at page 82, they speak of "forcing the candles from the moulds"; and at page 87, they say:

20 "Consequently the candles from such molds as did not obtain sufficient variation of temperature, were difficult to *expel* and not so satisfactorily made as those which had been properly treated—that is to say, particularly candles made from paraffine, since stearine candles."

Other authorities use similar expressions. For example, Brantt (page 693) says:

30 "The candles being forced from the molds by the rammers are immediately secured and held stationary by depressing the lever G . . ."

Other expedients have been tried in getting the molded candle out. Brantt (page 609) says:

40 "To effect an easy removal of the candles from the molds, A. Reyns has constructed a machine shown in Figs. 141, 142, and 143, which conducts cold and warm water to the walls of the molds, the former for the purpose of quickly cooling the material in the molds, and the lat-

ter for the easy removal of the candles from them."

"After the molds are waxed, the melted candle material is poured in and cooled by conducting cold water . . . through the pipe Q. The cold water is then shut off, and after discharging that contained in the mold-carrier J through the cock T, hot water is admitted by a turn of the crank O, whereby the metal-molds K quickly expand. If, now, by a turn of the crank E, the cross bars C with the wicks fastened to them are raised up, the candles are removed from the molds."

In other words, after the candle has been chilled, the mold is again heated to expand it away from the candle, in order to get the candle out.

If it is desired to get a candle of polished appearance, Carpenter (page 281), says:

"A polished appearance is given to the candles by alternately admitting hot and cold water into the water box; the adjustment of the temperature is an operation needing special experience, the men's fingers forming usually their only thermometer."

Depending upon the material, the time required appears to vary widely. Greaves & Thorp (page 79, Vol. II.) says that the molding machines "can give up a couple of dozen pounds of candles per turn-out, two to three times an hour, until the supply of wax is exhausted"; thus indicating the time as from twenty to thirty minutes.

On the other hand, in describing the molding of tallow candles, Cameron (pages 265 and 266) says:

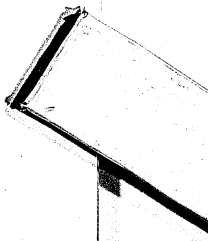
"The molds are generally made of pewter, carefully polished inside . . . The melted fat is poured in, generally by a small can or jack, Fig. 50, and it is essential that the

tallow should completely fill the mold which is of course maintained in an upright position. The candle must remain entire on cooling without any cracks, and should readily be removable from the mold. These results can only be attained when the fat at the sides cools more rapidly than that in the interior, and a rapid cooling is always necessary to prevent contraction of the candle. . . . If the tallow is too hot, when poured in, the candles are apt to stick, and are difficult to draw; if too cold the candles are not uniform in appearance, but become granular looking. The candles are ready to be taken out of the molds on the day after casting, and then only require cutting and trimming at the base."

This operation requires hours. As stated, rapid cooling is necessary "to prevent contraction" of the candle; the inference being that with tallow it would contract if not rapidly cooled while such rapid cooling insures maintenance of contact between candles molded thus insuring that candles shall be the shape of the mold.

This literature concerning the candle molding art shows that it is not universally applicable to candle materials; that variations have to be made depending upon the material; and that a chief problem is to get the candle out of the mold, to which end a tapered form is important, and the mold must be highly polished on its interior (preferably lengthwise) to aid removal and even then force is required to expel the finished candle.

Not only is the literature silent as to the possibility of getting an irregular unsymmetrical outer surface, but the teachings are that it would be impossible to utilize the candle molding methods in a case a cylindrical mold with an irregular molding surface were employed for the purpose of casting articles which should have a corresponding irregular outer surface.



Certainly the candle-making art does not contain an unmistakable disclosure of a process like that set forth in the Joyce patent in suit, and defined in claim 3, 4 and 6 thereof.

The candlemaking patents referred to by Mr. Massie do not shed any additional light on how to successfully make duplicate sound records.

The British patent to Humphrey No. 454, August 22, 1886, simply describes a concededly old method of making candles and asserts novelty only in applying the old method to making paraffine candles. It describes no step or method not fully set forth in the publications to which I have referred.

The same is true with respect to the Cowles patent No. 86,659, Jan. 20, 1893, which is simply directed to making each mold in two parts, which can be separated from each other, each section being tubular, in order that a candle may be made slightly larger at an intermediate point than at its opposite ends. It is significant that the only reference in the candle making art which involves making a candle bigger at the middle point than at its ends, sets forth a sectional mold for the purpose, the section plane being at the point where the large dimension occurs.

The Fournier patent No. 545,256, Aug. 27, 1895, contains no additional relevance. It refers to alternately applying hot and cold water (page 1, line 80) such as has long been practiced for making polished candles.

The making ofinking rollers for printing presses discloses nothing tending to show the applicability thereof to making sound records. Such inking rollers are commonly made of a mixture of glue and molasses and are soft and "tacky" when ready for use, in a printing press. The essential characteristic is that the printing roller should be perfectly smooth and cylindrical on the outside. So far as

the patents referred to (Hingham, No. 182,547, Sept. 25, 1876, and Hingham No. 419,944, Jan. 21, 1890) are concerned, it would appear that force was necessary to get the finished roller out of the mold, since the only reference to this subject is near the bottom of column 1, page 2 of the early Hingham patent, which says that "the rollers draw from or forced out of the mold" is the final operation. These patents contain no suggestion that there is any shrinkage away from the mold, which involves no distortion of the rollers, and they are wholly silent as to the possibility of utilizing the method to make any article with an irregular surface, much less that the method could possibly be useful for duplicating sound records.

Mr. Massie also refers to the Appelt patent No. 303,970, Aug. 26, 1884, for making drawing rollers, used in spinning machines for making thread. Such drawing rollers frequently have elastic surfaces of rubber, their purpose being to act upon slivers or rovings of cotton, wool or other fibers, so that by using pairs of rollers successively faster driven, the roving can be drawn out or extended in length and be thus brought to the suitable dimension for the twisting or spinning operation. Appelt proposes to make the drawing rollers of a fusible compound composed of gelatine glycerine, and other more secondary ingredients (page 1, line 12). Of course, such a roller should be cylindrical and should not possess an irregular or unsymmetrical surface. Appelt does suggest that this particular elastic compound (which is soft when in use) will shrink away from its mold on cooling so as to be readily withdrawn, but there is no intimation that any such action would take place in connection with materials suitable for duplicate sound records, or that the contraction would be of sufficient extent to permit the withdrawal of the sound record, or that its

longitudinal shrinkage shall be in such manner as not to distort the record. It is needless to add that the making of soft drawing rollers for spinning machines is a wholly unrelated art for making duplicate sound records hard enough for sound reproduction.

10 These are all of the items in the prior patented or published art earlier than the Joyce application to which Mr. Musieie has referred. The entire arts fail to show any instance prior to Joyce of casting a liquid material into a continuous mold having an irregular molding surface, to which the finished casting is to conform.

In making duplicate sound records, it is essential that the sound record irregularities should be faithfully reproduced to the minutest detail. Even if it be assumed that it was part of prior knowledge that the record material would shrink sufficiently in cooling so as to clear the mold to permit endwise withdrawal, it could not be affirmed or assumed *a priori* that such a method of casting would be either feasible or possible. When a material shrinks, it shrinks in all directions. If it shrinks within a cylindrical mold, it shrinks longitudinally as well as radially. These relative shrinkings would be proportional to the dimensions. If it be assumed that the thickness of the molded record 30 when cast in the mold is $\frac{1}{4}$ of an inch and its length is $4\frac{1}{2}$ inches (which are closely the measurements of "Complainant's Exhibit, Commercial Joyce Apparatus") the lengthwise shrinkage would be eighteen times that of the radial shrinkage. It is difficult to see how any prediction could be made that this lengthwise shrinkage could take place with the material occupying the irregularities of the mold, without an incident distortion. There was nothing in the literature of the art shedding any light on this subject, and the possibility 40

of doing so could be determined only by trying.

I fail, therefore, to find anything in the prior art of sound reproduction, or in any of the other arts referred to by Mr. Musieie, which negatives the novelty of the process of the Joyce patent as defined in Claims 3, 4 and 6 of his patent. He was the first who ever cast molten material suitable for sound reproduction into a continuous mold having sound irregularities on its interior, and to have his mold hot during the period when the molten sound record material was flowing and conforming itself to and around the irregular surfaces. Moreover, he was the first to show by subsequent artificial cooling, that a cast record would shrink away from the mold so as to clear the irregularities thereof, thereby permitting the separation of the two, and without interfering with the faithful reproduction in the duplicated cast record of the original master record. It is indubitable that Joyce made a distinct advance in the phonographic art, and did something which had never been done before. The ultimate and final achievement of his predecessors in the sound reproduction art (as exhibited by patents and publications prior to his application) was the mechanical duplicating machine of the Macdonald patent No. 559,896, May 12, 1896.

For all of these reasons, I am of the opinion that the Joyce process, as defined in Claims 3, 4 and 6, of his patent in suit, was substantially new.

Q. 10. You have referred in your preceding answer to the longitudinal contraction or shrinkage of the duplicate sound records. Is this of sufficient extent to be taken into consideration in the practical making of commercial sound records?

A. It is. The ordinary reproducing machines on the market have one hundred threads to the inch for feeding the reproducing stylus, and the com-

mercial sound records should have the same pitch for the spiral sound groove thereon. To get this result, in view of the shrinkage of the material, the original sounds must be produced on a sound recording machine having a coarser pitch. In complainant's course of manufacture, as there are two shrinkages involved (one in making the duplicate masters and the second in making the commercial sound records) the pitch of the original recording machine has to be correspondingly increased, and it has 97-1.3 threads per inch. The difference in the original and final pitch is the result of the longitudinal shrinkage during the casting operations.

Q. 11. Mr. Massie, defendant's expert, has referred to the Edison patent No. 713,269, granted Nov. 11, 1902, on an application filed March 5, 1895, in connection with the Joyce patent in suit. Please compare this Edison process with that of the Joyce patent and state the result?

A. This Edison process is different from that of Joyce and is a *pressing* process, as contrasted with the Joyce *casting* process. In accordance with this Edison process, a cylindrical metallic mold is made from a master record so as to have sound irregularities on its surface. A cylindrical blank of sound record material is then independently molded and is made of a diameter just less than the minimum diameter of the mold. This blank is then inserted in the mold and both are heated sufficiently to soften the record material, but not to melt it. The record material expands more than the metal mold, so as to thereby be forced by the expansion into contact with the mold surface. In case this should be insufficient, the patent suggests that the blanks can be further expanded into engagement with the mold surface by a tapering mandrel. After this is done the blank and mold

are chilled in a refrigerating chamber and the duplicate record shrinks sufficiently to be separated by longitudinal movement from the mold.

There is no suggestion of directly casting the molten record material into the mold, which is heated when the molded record material is in contact therewith, as in Joyce. Joyce avoids the preliminary making of a cylindrical blank of a precise and particular diameter; and he avoids the use of a mandrel; and insures a greater perfection in the faithful copying in the mold surface.

Assuming that the Edison process was in all respects a good one, it could by no means be inferred that molten material could give an accurate reproduction, or that its laws of shrinkage would be similar to those of a previously molded blank, which was never permitted to reach a melted condition.

The Joyce process is distinctly and radically different from that of Edison.

Q. 12. I direct your attention to the testimony of Mr. Felix Holden, on behalf of the complainants, and of Mr. Massie, on behalf of the defendant, in the comparison of the process practiced by the defendant and that defined in Claims 3, 4 and 6 of the Joyce patent in suit. Please consider the conclusions of these gentlemen and state whether or not you agree with either of them, and why.

A. I agree with Mr. Holden that the defendant practices the process defined in these claims, and I find nothing in the prior art or in the reasons given by Mr. Massie which leads to the different conclusion reached by Mr. Massie.

As I understand Mr. Massie, he distinguishes the defendant's process from that of Joyce because Joyce first heats his mold to the desired temperature before pouring the melted record material into it; whereas the defendant lowers its mold into

a bath of the molten material so quickly that the mold is still cool when it becomes filled with the molten material, and becomes heated only as the result of its immersion in the bath and the presence of the molten material inside of it.

The specific difference referred to by Mr. Massie does exist, but does not affect the substantial resemblance because the two specific methods are substantial equivalents. The point in heating the mold is that both mold and material shall be hot at the same time, in order that the material may adequately fill the mold and flow in and around its irregularities. This result is the same, whether the mold is first heated before the material is introduced or whether the heating of the mold is the result of the immersion in the bath. In fact, I understand Mr. Macdonald (one of defendant's witnesses) concedes that defendant's process (though slower) would still be the same if the mold were lowered into the bath so gradually that it would be raised to the requisite temperature before the molten material flowed into it. This would be a pre-heating, just as if the heating were independently accomplished. No one of the pertinent Joyce Claims specifies the pre-heating; it sufficing that both mold and material should be hot to permit intimate contact. This specific difference, therefore, does not prevent their being equivalents.

There is nothing in the prior art necessitating the exclusion of defendant's equivalent for the equivalent pre-heating specifically described by Joyce. The defined process is equally novel, whether the mold is heated before the material is introduced or after.

Adjourned subject to notice.

(West Virginia Suits.)

Met pursuant to agreement.

Present:

Counsel as before.

Direct examination of Mr. Browne continued.

By Mr. MASSIE:

Defendant's counsel now enters timely objection to the statement in answer to Q. 6, under the heading, "Making Duplicate Masters," that the same "are made in accordance with the Joyce patent in suit," on the ground that the statement is a conclusion of law and without any basis of fact in the evidence.

Objection is made to the estimate in the same paragraph for the working temperature of the mold, viz., 260 degrees F., on the ground that the same is purely conjectural.

Objection is made to the statement in the same paragraph that the master wax is substantially the composition of the Aylsworth patent No. 752,375, on the ground, first, that the statement is incompetent, as being merely hearsay; and second, it is incompetent as being a conclusion of law without any basis of facts.

The statement in the same answer under the heading "Commercial Sound Records," to the effect that complainant's ultimate commercial records are made in substantial accordance with the method set forth in the Miller & Aylsworth patent in suit, is objected to on the ground that the same is a mere conclusion of law, and without sufficient basis of fact.

Objection is made to the last sentence of the same paragraph as hearsay and incompetent.

Objection is made to the statement in the eighth paragraph of the answer to Q. 5, on the ground that the assumption that the material *must* be rendered fluid, etc., is without basis of fact in the evidence, a pure assumption, and misleading.

Q. 13. Please consider the patents referred to by Mr. Massie in connection with the Miller & Aylsworth patent in suit, No. 685,615, Oct. 1, 1901, and state whether or not you find anything therein to negative the novelty of the subject matter of Claims 3, 4 and 5 thereof.

A. In answering this question, I will assume that the Court will construe these claims as being of sufficient scope so to define the defendant's method as specifically practiced, as well as the specific method set forth in detail in the Miller & Aylsworth specification.

In accordance with the Miller & Aylsworth patent the molten wax-like material is cast in the interior of a cylindrical mold, and after the casting, and while the material is still within the mold, the interior of the wax-like material is finished by boring or reaming it out to the desired shape. After the finishing or reaming operation, the mold or record is shrunk away from the metal mold and is withdrawn endwise. The finishing or reaming is done while the molded material is still in the soft or plastic condition. Hence, the cylindrical metal mold or matrix not only serves to give the desired contour to the sound groove formed in the molded record, as a result of the casting operation, but it also serves to support the molten material during the reaming or finishing operation. Owing to the finishing or reaming being done while the molten material is within the mold and is still soft, the finishing operation is easily carried out and without any danger of cracking or breaking the record; and the entire operation is carried out

quickly. Now, I fail to find in the prior art any instance of thus reaming or finishing the interior of a sound record, while it is still within the metal mold or matrix into which the wax-like material has been cast.

I will briefly refer to the various patents referred to by Mr. Massie in this connection.

Wilder No. 185,454, December 5, 1876. This patent is for the manufacture of wooden tubs or buckets, and comprises a hollow chuck in which the staves are inserted and which holds the staves while their interior surfaces are being turned smooth, and while the "cavase" is being cut. The "cavase" is the groove at the bottom of the staves in which the head of the tub or bucket is secured. This has nothing to do with the manufacture of sound records. There is no casting of material in a mold for the purpose of giving character to the outer surface; and no finishing or reaming out of the interior of such molten material, and particularly when such molten material is still soft. The Wilder patent is entirely foreign to the phonographic art.

Edison No. 335,462, Nov. 27, 1888. This patent relates to the making of blanks, in which a sound record is to be subsequently cut, and does not relate to the molding of records to obtain a sound groove therein. In this Edison patent no finishing or reaming is done while the blank is within the mold. On the contrary it is reamed both inside and out after the molded blank has been withdrawn from the mold. The blank is not removed while it is still soft as the result of the molding operation; but instead, the "knives or cutters are suitably heated to a temperature slightly below the melting point of the wax composition" (line 34). The specification says that the "rapidity of the cutting

operation is such that the wax body of the blank does not melt" (line 36). The molded blank, after removal from the mold, is first reamed out on its interior or bore and is, by a second operation, reamed or finished on its exterior. Concerning the operation of reaming out or finishing the interior or bore of the blank, the specification says:

10 "For the heated cutting tool I employ, first, a tapering reamer, which is heated by the introduction of steam into its hollow body and is revolved rapidly. The molded blank is pushed onto this reamer and withdrawn from it by a continuous motion of the hand, so that the reamer by the combined cutting and heating action turns out the bore of the blank to the precise size desired." (Lines 38-46.)

20 This is wholly different from the Miller & Aylsworth patent. Edison deals with a molded blank and not with a molded record; the heat employed during the reaming operation is due to heating the knives by special appliances for that purpose, and is not due to the residual heat left in the molded record as the result of the molding operation; and Edison holds the molded blank in the hand and manipulates it back and forth during the reaming operation, instead of using the mold in which the record is cast as the support during the reaming or finishing operation.

30 Manifestly, this Edison patent does not disclose the Miller & Aylsworth method, nor does it contain anything suggestive.

40 *Edison No. 393,463, Nov. 27, 1888.* This patent simply discloses the apparatus for reaming out the molded blank which is used in carrying out the method of the Edison patent No. 393,462, just considered. The specification says:

"The hollow cylindrical wax phonogram-blanks are taken in the hand and are pushed onto the reamer and withdrawn from it by a continuous motion, the reamer being brought up to the desired temperature and the combined action of heating and cutting rapidly and smoothly reaming out the bore of the blank." (Lines 55-101.)

Hence, what I have said with regard to the Edison patent No. 393,462, applies equally to this Edison patent. In addition, this Edison patent, No. 393,462, says:

"The wax blanks are preferably heated by a hot table, oven, or chamber approximately to the temperature of the reamer before being cut by the reamer, in order to prevent cracking by unequal expansion." (Line 102, page 1, lines 1-4, page 2.)

Edison thus contemplated heating the blank, but by a separate heating operation. It did not occur to him to utilize the heat in the molded blank, due to the molding of the same, and while within the mold. On the contrary, he took the blank out of the mold and subsequently heated it by a separate operation. This gets still further away from the Miller & Aylsworth process which not only avoids any such separate heating of the molded record, but also the heating of the cutting knives, and utilizes the mold itself as a support for the record during reaming, instead of requiring the same to be held by hand.

Edison No. 414,701, Nov. 22, 1889. This is likewise for a blank, and not a record, and a spiral rib is formed on the interior of the blank by molding the blank material around a ribbed core, and not by reaming out with a cutter. This patent wholly lacks the characteristic feature of Miller & Aylsworth, consisting in reaming out the bore of

the molded record while still within the mold in which it was cast.

Lambert No. 645,920, March 26, 1900. In this patent there is no casting of molten wax-like material into a mold. The specification says:

10 "I next take a soft ring of cellulose or vulcanized rubber, either in a raw or partially-cured state or previously softened with some solution and of sufficient thickness to receive in perfect form the indentations of the matrix and at the same time furnish a suitable backing or support for the phonographic reproduction of the record. This relatively thick ring or tube is then placed within the cylindrical opening of the matrix and by means of an expansive pressure with heat forced out-
20 wardly, completely filling the matrix and against the inner surface thereof, thus making a counterpart of the same and a record similar to that on the original wax cylinder. The ring thus formed, having on its outer face a faithful imprint of the matrix, is then allowed to harden, either naturally or by artificially curing the substance thereof, through which hardening it shrinks sufficiently to enable its subsequent removal to be made from the matrix without injury to either." (Lines 95-100, page 1; lines 1-14, page 2.)

30 "There is no casting of wax-like material within the mold in this patent, but instead a previously formed and shaped ring of cellulose or rubber is inserted into the mold, and when softened by heat is forced outwardly in contact with the mold. There is nothing to indicate that this outward forcing in any way affects the character of the ring of cellulose or rubber. There is no suggestion for finishing the interior or bore of a sound record, which has been molded by casting, and while still within the mold.

Edison No. 667,662, Feb. 5, 1901. In accordance with this patent the molded records are withdrawn from the mold after being made in the manner described. The specification says:

"The resulting duplicates thus secured after reaching the normal temperature are properly dressed at the ends and are reamed internally to the proper size, being then ready for use."
(Page 2, line 110.)

Edison thus reams out a cold sound record after it has been removed from the mold; and does not ream out or finish the bore while the molded record is still soft and within the mold.

Edison No. 718,209, Nov. 11, 1902. In accordance with this patent a cylindrical blank is placed within a mold and is then expanded outwardly by a mandrel. There is nothing to indicate that the forcing action of the mandrel has a finishing action on the interior of the previously formed blank. There is no suggestion for finishing the interior bore of a molded record while still within the mold, in which it has been cast.

Joyce No. 831,668, Sept. 25, 1906. This patent I have already discussed at length. The specification says that after the wax has been poured into the mold it will generally have the exact form of the mold when cooled, "but under certain circumstances the wax cast may be subjected to pressure in any of the usual ways." (Page 2, line 4.) The specification then says:

"A hydraulic-pneumatic or other pressure may be applied to the wax column as is done in casting metal. A good way to apply pressure, however, is to wait until the wax is partly set and then screw down the tapering core into its bore 1. This not only compresses, but expands the wax outwardly insuring that all parts of the mold are impressed into and re-

produced by the wax." (Page 2, lines 5-9.)

No finishing is thus done to the interior or core of the molded record.

Mr. Massie also refers to the two Macdonald patents, dated September 17, 1901, No. 682,991 and No. 682,992, but I do not understand that he refers to these as a part of the prior art (as their application dates are later than that of the Miller & Aylsworth patent in suit No. 683,615), but simply as illustrative of certain steps used by the defendant in making the sound duplicate records. However, neither of these patents shows the finishing of the interior of the core of the duplicate sound record, as a special operation following the casting of the wax-like material in the mold and while still in the mold. In these Macdonald patents the interior of the molded record is given form as the result of the casting operation itself, in this respect, so far as concurrent interior shaping and exterior molding are concerned, resembling the modified method of the Joyce patent No. 831,068, just referred to, and the method of the Edison patent No. 712,320, and of the Lambert patent, No. 645,920, wherein the internal pressure applied within the hollow record is a part of the operation of obtaining the sound groove on the exterior of the record. As shown in these Macdonald patents, the records are molded with an interior spiral rib.

This review of the art shows that Miller & Aylsworth, by the patent in suit, No. 683,615, first disclosed a separate finishing operation to shape the interior of a molded sound record, while the molded record is still within the mold in which the material of which it is composed had been cast while in a molten condition. This method is new and of great practical utility. It insures a sound record of minimum weight, which will exactly fit a sound-

reproducing machine; the interior finish is accomplished when the sound record is adequately supported and while the material may still be soft, so as to insure easy cutting without danger of breaking or splitting the sound record; and the operation is simplified, since there is no intermediate handling of the sound record itself, apart from its mold between the casting and the finishing.

Q. 14. I direct your attention to the testimony of Mr. L. Seward Bacon, on behalf of complainant, and of Mr. Massie, on behalf of the defendant, in the comparison of the process practiced by the defendant, and that defined in Claims 3, 4 and 5 of the Miller & Aylsworth patent in suit, No. 683,615. Please consider the conclusions of these gentlemen and state whether or not you agree with either of them.

A. I agree with Mr. Bacon that defendant practices the process defined in these claims, and I find nothing in the prior art or in the reasons given by Mr. Massie which leads to the different conclusions reached by him.

As I understand Mr. Massie, he distinguishes the two methods because in Miller & Aylsworth the casting step is specifically different from the casting step employed by the defendant. Miller & Aylsworth specifically describe lowering a cold mold, open at its bottom, into a bath of molten wax-like material, which flows upwardly into the interior of the mold, chilling and accumulating therein until the desired thickness of material is formed, whereupon the mold is withdrawn with the molded material adhering to the interior thereof, and partly congealed. On the other hand, in the defendant's manufacture, a mold closed at the bottom and having an interior core, is immersed into the molten bath of wax-like material, so that the molten material flows down through the open top

and fills the space between the mold and core. The mold remains immersed until it is heated by the bath of molten wax. When the mold is withdrawn filled with wax, both the mold and wax are hot and the wax is in a molten condition. Also, Miller & Aylsworth melt the wax only a little (20 to 40 degrees F.) above the melting point of the wax, and the immersion of the mold does not last long enough to allow its temperature to be raised sufficiently to permit the deposited molten material thereon to become re melted, the mold being shielded to prevent its rapid heating; whereas in defendant's manufacture, the wax is superheated many degrees above its melting point, and the mold is permitted to remain immersed until it is of substantially the temperature of the bath of melted wax.

The specific differences to which Mr. Massie refers exist, but none of them are called for by any one of the pertinent claims of the patent in suit, except as may be inferred from the language used in each of these three claims, which refers to immersing the molten wax-like material "whereby the material will accumulate on the bore of the matrix or mold and chill thereon in a layer of the desired thickness." This quoted language seems sufficient, by comprehensive to define both methods. Even, however, should it be construed to mean that the material coagulates within the mold while the mold is yet within the molten bath, nevertheless, the specific method carried out by the defendant is the equivalent of the corresponding step in the Miller & Aylsworth patent. The point of these Claims is that after the molding has been done by casting the molten wax-like material within the mold, and after the casting operation is complete, the interior of the molded record is shaped and finished, while the record is still within the mold, this finishing

being a separate operation independent of the casting, and the formation of the sound groove by casting; and in accordance with Claim 5, this finishing is done while the cast record is still soft, or before it has become hard. This essential method is carried out by the defendant, and defendant differs from Miller & Aylsworth simply by a different specific way of doing the casting; defendant's specific casting method being the equivalent of the specific casting method used by Miller & Aylsworth.

The differences, therefore, pointed out by Mr. Massie do not affect the substantial resemblance, but simply involve, as to one step, the substitution of an equivalent.

Q. 15. Please consider the patents referred to by Mr. Massie in connection with the Aylsworth & Miller patent in suit, No. 683,676, Oct. 1, 1901, and state whether or not you find anything therein to negate the novelty of the subject matter of Claims 6 and 7 thereof.

A. I find nothing in the patents referred to by Mr. Massie negating the novelty of the subject matter of these Claims 6 and 7 of Aylsworth & Miller patent in suit.

This patent is for apparatus used in carrying out the process of Miller & Aylsworth patent, No. 683,615, already considered. The point of these Claims is that the mold has a two-fold function; it is used with a casting means, so that a sound record is cast therein, with a sound groove on its exterior; and the same mold serves as a support for the cast record, while its interior is finished.

In accordance with Claim 7, the mechanism employed is such that the duplicate record is formed on its interior with "a series of concentric ribs of gradually increasing diameters, from one end of the duplicate to the other, whereby the duplicate

may be properly received upon a tapered mandrel."

I will briefly consider the various patents referred to by Mr. Massie.

Brunner, No. 55,655, Oct. 12, 1893. This patent is for casting hollow toys out of readily molten soft metal by means of dipping a hollow, open-bottom mold into the bath of molten soft metal. There is no subsequent finishing of the interior. The mold is a divided one which otherwise the cast articles could not be removed. There is nothing in it to suggest the making of phonographic sound records.

Wilder No. 185,654, Dec. 5, 1876. This patent is for making tubs and buckets out of wooden staves. There is no casting operation involved. I have referred to this in answer to Q. 13. Mr. Massie suggests, in answer to Q. 18, that "the cutting of a plurality of grooves, leaving a plurality of concentric rings would be obvious if such concentric rings were desired." The purpose of a single concentric groove in Wilder is to form a groove for the bottom of the tub or bucket. Manifestly, there never could be any desire of making a tub or bucket with a lot of concentric grooves on its interior. However this may be, Wilder only described forming one groove, and no one desiring to improve the phonographic art would think of looking into the manufacture of wooden tubs or buckets for information. There is no intimation of using the same feature as a mold for casting and forming an exterior surface, and as a support while reaming out or finishing the interior.

Edison, No. 393,462 and 393,463, Nov. 27, 1888. I have discussed both of these patents in answer to Q. 13. They simply disclose reaming out a tapering bore of a previously molded blank, the blank being held in the hand. No concentric ribs

are formed, and the finishing of the interior is not accomplished while the blank is in position within the matrix or mold.

Edison, No. 414,761, Nov. 12, 1889. I referred to this patent in answer to Q. 13. In this case a blank is formed and not a sound record. A core is employed with a spiral groove, so that the melted material poured in the space between the smooth mold and the core, gets, as a result of this casting operation, an interior bore with a spiral rib. The core is subsequently removed by unscrewing the same from the blank. This operation is carried on by the complainant herein in making its blanks. This patent wholly fails to disclose an apparatus wherein a mold has a two-fold office, namely, serving to receive molten material so as to form a sound groove on the exterior thereof; and secondly, serving to support the molded sound record while its interior is being finished. Also, it fails to show any way for making the concentric ribs called for by Claim 7 of the Aylworth & Miller patent in suit. In connection with the concentric ribs, Mr. Massie, in answer to Q. 18, says:

"And Edison says: 'I prefer to form a spiral rib.' This is a disclosure of 'ribs' in general and 'spiral ribs' in particular. The only internal ribs other than spiral that would naturally occur to one are either longitudinal ribs or concentric ribs. This same Edison patent likewise refers (near the top of the second column) to reaming out the interior of the photogram-blanks." (Mr. Massie's italics.)

It does not seem to me that any inference can be drawn from this Edison patent, No. 414,761, that concentric ribs could be used. Nothing is said about them, and manifestly it would be impossible to make concentric ribs by the plan shown in this Edison patent, and get the blank off from the core.

A spiral rib is possible, because the separation of core and blank can be effected by unscrewing. Obviously, when the Edison specification says:

"I prefer to form a spiral rib on the interior surface of the blank." (Line 30.)

the preference is between the ribs as contrasted with the "flanges or projections" mentioned at line 20. Manifestly, it would be possible, in accordance with the method of this patent to have separate and detached flanges or projections (as distinguished from the spiral ribs) which, if spirally arranged, would permit the separation of the core and blank. Also, it would be possible to have longitudinal ribs, and still separate the core and blank. But concentric ribs would be an impossibility, and hence cannot be inferred from an expressed preference for a spiral rib.

Edison, No. 667,662, Feb. 5, 1901. This patent was referred to in my answer to Q. 13. It describes no concentric internal ribs, and no finishing of the interior of the record while still within the mold.

These are all of the patents referred to by Mr. Massie. They show that it was new with Aylsworth & Miller to provide a mold having a double office, namely, to form a sound having a double surface of record material, which is cast therein; and second, to support the molded sound record while, as a subsequent operation, its interior is being finished.

It was also new with Aylsworth & Miller to finish the interior of the sound record with concentric ribs. These characteristics are useful; are new; and are used by both the complainant and by the defendant.

Q. 16. Mr. Massie, as I understand, expresses the opinion that aggregations and not combinations

are recited in each of Claims 6 and 7 of the Aylsworth & Miller patent in suit. Please state whether or not you agree with Mr. Massie.

A. I do not. The essence of combination is co-operation; and to constitute an aggregation there must be absence of co-operation. In the present instance there is co-operation. The mold itself is a connecting element between the devices which do the molding and the devices which do the reaming or interior shaving, and the resulting product has a molded external sound groove and a finished interior. The mold is common to the two operations, receiving the molten wax-like material during the casting and supporting the molded material during finishing.

Q. 17. Please consider the prior art referred to by Mr. Massie in connection with the subject matter of Claim 5 of the Aylsworth & Miller patent in suit, No. 688,676, Oct. 1, 1901, and state whether or not you find anything therein to negate the novelty of said subject matter.

A. I do not find anything in the prior art referred to by Mr. Massie to negate the novelty of the subject matter of Claim 5 of the Aylsworth & Miller patent in suit.

The point of this Claim is an apparatus which simultaneously obtains a sound groove on the cylindrical surface of the sound record; and a designation on the end of the sound record which shall indicate in visually intelligible characters the name of the composition constituting the sound record. As clearly shown in Fig. 1, the mold carries a die at one end containing the name characters, so that the name and sound groove are simultaneously molded, as a result of the casting operation.

The only patents specifically referred to by Mr. Massie were, I believe, Edison, No. 667,662, Feb. 5,

1901, and Schuberth, No. 359,637, March 22, 1887. 1887.

Adjourned until April 17, 1908.

Direct examination of Mr. BROWNE continued.

Met pursuant to adjournment.

10 Present:

Counsel as before.

April 17, 1908.

A. Continued to Q. 17. Mr. Missie concedes that the Edison patent, No. 947,662, does not have the reverse letters for imprinting the designation of the sound record at the beginning of his answer to Q. 21.

20 The Schuberth patent, No. 359,637, is for a soap press, which is wholly foreign to the phonographic art, as evidenced by the mode of operation which Schuberth thus describes:

30 "The *modus operandi* of the device is as follows, to wit: A chunk of soap of a somewhat greater quantity than required for the piece to be formed being placed on the lower mold, A, the upper mold B, is moved down upon it, whereby the soap is pressed between to assume the shape of such mold, the surplus being pressed out between the edges and cut-off. Then the upper mold, while being lifted again, will leave the soap sticking in the lower mold, whence it is displaced by depressing lever E to elevate die D, which raises the soap to clear the mold, that then can be easily picked up and removed.

The die D may be engraved to produce the impression upon the soap of a monogram, trademark, or other character." (Page 3, lines 77-83 inc.)

40 Schuberth starts with a chunk of solid soap, in-

serts it into his press and shapes the solid soap and puts lettering on one side *only* of the soap.

So far as the prior art is concerned, Miller & Aylsworth were the first to ever provide apparatus for putting a readable marking on the end of a phonograph sound record; and they were the first to make such marking simultaneously with the production of the sound groove. This was new with Aylsworth & Miller; is useful and desirable; and is adopted by both complainant and defendant. 10

The real attack made by Mr. Missie on the subject matter of Claim 5 of the Aylsworth & Miller patent is the general denial that there was any act of invention required in providing the molding apparatus with reverse lettering at one end, so that readable markings are formed concurrently with the formation of the sound record. The desirability of having each sound record bear a distinguishable readable mark must have been known from the beginning of the art, but nobody pointed out apparatus for doing it before Aylsworth & Miller. Moreover, the Aylsworth & Miller apparatus does not call for indiscriminate marking, but for marking in a particular way. It might well be conceded that the bald idea of putting an intelligible marking on a sound record would be obvious; but this is not all that Aylsworth & Miller have done. On the contrary, they have provided apparatus for making this marking on one end of the sound record. 20 This is of special utility, since the records most conveniently stand on one end in the factory, thereby preserving their sound surfaces from injury, and by having the markings on the upper end, the records are readily selected for assorting and packing. Moreover, the records are packed and sold in suitable boxes with the marked end at the top, so that they can be readily identified. 30

These considerations show an intelligent adapta- 40

tion of means toward a particular end, having special utility in the manufacture of duplicate sound records; and as novelty is present, the quality of invention follows.

By Mr. Massie: The last statement of the witness, referring to the quality of invention is objected to as incompetent on the ground that the same is a pure question of law.

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Q. 18. I direct your attention to the testimony of Mr. J. Sevard Bacon on behalf of complainant, and to Mr. Massie on behalf of defendant in comparison of the apparatus employed on behalf of defendant and that defined in Claims 5, 6 and 7 of the Aylsworth & Miller apparatus patent in suit, No. 683,675. Please consider the conclusions of these gentlemen and state whether or not you agree with either of them.

20

A. I agree with Mr. Bacon that defendant's apparatus has the subject matter defined in the Claim and I find nothing in the prior art, or in the reasons given by Mr. Massie which leads to the different conclusions reached by him.

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Mr. Massie's conclusions are reached upon specific differences between the apparatus of defendant and of Aylsworth & Miller, which are substantially the same differences which he urges in connection with the two methods and which I have discussed in answer to Q. 14. These specific differences relate to the details of the apparatus, whereby the particular casting steps are performed. These specific differences are not called for by the language of the pertinent claims, except insofar as they may be involved in the interpretation of the expression "means for depositing molten material within the matrix or mold and upon said disc," as used in Claim 5, or the expression, "the means for
40 securing the deposit of a wax-like congluable ma-

terial upon the bore of a matrix or mold," as used in Claims 6 and 7.

Mr. Massie contends that these words "depositing" and "deposit" identify the particular casting method employed by Aylsworth & Miller, and hence the particular construction of the apparatus which permits this particular method to be carried out. On the other hand, it seems to me these words are comprehensive in their character and as generic as any words which might be selected competent to define both methods. Assuming, however, that Mr. Massie's interpretation of these words is correct, nevertheless in this respect the specific means employed by the defendant are the equivalent of those employed by Aylsworth & Miller.

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The point of Claim 5 is that the mold is of such character that the material cast therein simultaneously gets a sound groove on its cylindrical surface and a readable marking on one end; the point of Claim 6 is that the same mold serves at one stage of the operation to receive the molten material cast into it, and at another stage of the operation to support the molten material while being finished on its interior; and the additional point of Claim 7 over what is recited in Claim 6 is that the apparatus forms concentric ribs of gradually increasing diameter from one end of the duplicate to the other on its interior. These characteristic features were new with Aylsworth & Miller and are present in defendant's apparatus.

STIPULATION.

Complainant's counsel offers in evidence the various publications and patents referred to by the Witness Browne, during his direct examination, and it is stipulated that the three books referred to were published upon the dates recited in their title pages, that the various patents were issued
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upon the dates appearing on their faces, upon applications filed on their respective dates recited in each patent, subject to correction for error upon due notice.

It is further stipulated that the books offered in evidence may remain in the possession of complainant's counsel, to be produced if called for upon reasonable notice.

- 10 The exhibits are now marked "Complainant's Exhibits" with the following respective designation:
- Braun—Manufacture of Soap & Candles—1888;
 Carpenter—Soap and Candles—1885;
 Ott—Soap and Candles, 1867;
 Edison British patent No. 1644 of April 24, 1878;
 Edison patent No. 500,521, Feb. 8, 1878;
 Bell & Tainter patent No. 341,214, May 4, 1886;
 20 Tainter patent No. 341,287, May 4, 1886;
 Tainter patent No. 341,288, May 4, 1886;
 Edison patent No. 382,419, May 4, 1886;
 Edison patent No. 382,492, May 3, 1888;
 Herrington patent No. 399,294, March 12, 1889;
 Herrington patent No. 399,265, March 12, 1889;
 Edison patent No. 430,274, June 17, 1890;
 Douglass patent No. 475,490, May 21, 1892;
 Bellini patent No. 484,381, Dec. 20, 1892;
 Edison patent No. 484,282, Oct. 18, 1892;
 30 Edison patent No. 484,584, Oct. 18, 1892;
 Amet patent No. 539,212, May 14, 1895;
 Amet patent No. 545,439, Sept. 3, 1895;
 Macdonald patent No. 555,806, May 12, 1896;
 Aylesworth patent No. 782,375, Feb. 14, 1905.

CROSS-EXAMINATION.

Without waiving the objections heretofore entered, Mr. Massie cross-examines as follows, any cross-examination upon the matters objected to being *de bene esse*.

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x-Q. 19. You testified, did you not, as an expert for the present defendant, the American Graphophone Company when it was a complainant against the Edison Phonograph Works, charging infringement of the Bell & Tainter graphophone patent, No. 341,214 and the Tainter graphophone patent, No. 341,288, both dated May 4, 1886?

A. Yes.

x-Q. 20. That about a dozen years ago, was it not?

A. Yes.

x-Q. 21. In what patent suits relating to the talking machine art have you given testimony since then?

A. About the time of the suit by the American Graphophone Company against the Edison Phonograph Works I also testified on behalf of the American Graphophone Company in a suit against the United States Phonograph Company and others, in which the Bell & Tainter and Tainter patents, above mentioned, were involved. Also, about the same time I testified on behalf of the American Graphophone Company in a suit brought against them on an Edison patent for coin-operated talking machines. Some time after that I testified for the American Graphophone Company for a suit brought on the same Bell & Tainter patent against a defendant in Chicago, whose name I have forgotten. I believe the defendant's name was Amet. More recently I have testified for the Edison Company against the Columbia Phonograph Company, General, in a suit on the Aylesworth patent No. 782,375 on a composition used for making sound records. Also, I have testified in a suit between the American Graphophone Company and Smith on behalf of Smith, involving a contract with reference to a method of making duplicate sound records.

x-Q. 22. I call your attention to the report of a

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case entitled American Graphophone Company against Annet on page 789 of Vol. 74, Fed. Rep.; also to decree appearing page 1008 of the same volume, both of which appear to be dated April 6, 1896. Is this the case you referred to in the last answer as having a Chicago defendant?

A. I think so.

10 x-Q. 23. In answer to Q. 6, under the heading "Blank-making," you refer to the Edison patent No. 430,274, June 17, 1890. So far as you know has the specific composition set forth in that patent ever been used successfully and commercially?

A. I do not know of any own knowledge, but have been advised that the specific soap composition used commercially is different from that of the soap composition specified in this patent.

20 x-Q. 24. What composition does Joyce in the patent in suit, direct us to use?

A. He states at line 19, page 2, that he employs the "usual phonogram compound" from which I understand that he used the same compound which was then used for making phonograph records. He states, however, that he does not limit himself to any particular compound.

30 x-Q. 25. What was the usual phonogram composition used at the date of filing the Joyce application?

A. It was a metallic soap compound. I understand it was a composition made from stearic acid, caustic soda or sodium, or both, a little aluminum, and a hydrocarbon wax.

x-Q. 26. Have you examined the Edison deposition offered in evidence herein by defendant?

A. No, I did not know that such deposition had been offered in evidence.

40 x-Q. 27. Confining yourself for the moment to the steps and directions specifically disclosed by the

Joyce patent, that is without attempting to apply what you may regard as the broad scope of Joyce's claims to more or less equivalent processes, so far as you know, could the specific Joyce process disclosed be employed with the specific composition of the Edison patent No. 430,274, above referred to, to produce satisfactory molded records?

A. I cannot say because I do not know what the behavior of that particular Edison composition would be.

x-Q. 28. The same question with regard to the specific composition of the Bell & Tainter patent No. 344,214, namely beeswax and paraffine?

A. I cannot tell, because I do not know how that beeswax and paraffine composition would act.

x-Q. 29. In a suit now pending between the same parties here litigating it is testified to or admitted by both parties that the regular record composition in use about the period of 1897 was substantially the composition disclosed in the Macdonald patent No. 606,725, July 5, 1898 (application filed April 27, 1896). Assuming this to be correct, could the specific steps and disclosures of the Joyce patent in suit be used with that composition to produce satisfactory molded records?

A. Yes, except that the records made of that material would not today be regarded as satisfactory when compared with the records made from the modern materials on account of the greater softness and hence lesser durability of the old material.

80 x-Q. 30. What is the authority for the answer you have just given?

A. I have tried the Joyce process in connection with the old composition with successful results.

x-Q. 31. To what temperature did you raise the mold; or are you now referring to what you have stated in your answer to direct Q. 6, under the head of "Making Duplicate Masters"?

A. In trying the Joyce process with the old composition, the mold was heated in the same manner as I stated in answer to Q. 6, relating to molding duplicate masters. That is to say, the mold was heated until the attendant told by wetting his finger that moisture would sizzle on the surface of the mold. In the test of the temperature that I made, the indication was that the mold was heated to something less than the melting point of the soap composition.

The material was the same that is commercially used by the complainant in making its blanks, that material being the soap composition that has long been used by complainant and it was heated to the usual temperature, which is about 320°F.

x-Q. 31. I understand that in the tests just referred to you took an unsplit cylindrical record mold, having a core, and the ordinary blank-mixture used by complainant; and that with the exception of first warming the mold as stated by you, in all other respects you carried out precisely the steps, temperatures, etc., employed by complainants in making their blank cylinders?

A. Yes, except that the steps were not the same. In making the ordinary blank composition, there is no chilling of the mold. In making the blanks, the mold is pulled off while the material is still soft and warm and the spirally threaded core is unscrewed, while the material is still soft and warm. In testing the Joyce process with the blank material, the procedure was followed as specified by me in answer to Q. 6, under the heading "Making Duplicate Masters."

x-Q. 32. There is testimony in the record as to the temperature given the material by complainant in molding duplicate masters; but there is no testimony heretofore given as to the temperature employed by complainant in molding its blank cylinders. You have said it is about 320°F. Are you

testifying from actual observation, or from a general understanding and information?

A. From actual observation, subject to my present recollection as to the temperature. I noted the temperature at the time, and my recollection is that it was 320°F.

x-Q. 33. In your answer to Q. 6 under the heading "Making Duplicate Masters," you read the temperature of the mold after it had probably cooled somewhat as 340°F., and estimated that the working temperature would be about 260°F. In your answer to x-Q. 31 you say it was "somewhat less than the melting point of the soap composition." Do you mean about the same temperature in each of those two answers?

A. Yes.

x-Q. 34. In the test made by you did you slightly oil the mold and the core?

A. I did on one occasion, and was unable to appreciate any difference in the product except that perhaps when oil was used the surface exhibited a rather more polished appearance.

x-Q. 35. I understand that oil is not used in complainant's regular process of molding duplicate masters. That is so far as you have observed that process?

A. That is correct.

x-Q. 36. In carrying out your tests, did you attempt to artificially chill the interior of the casting or duplicate record?

A. No, except in so far as the core may have been chilled by the immersion of the mold and core in the cold water.

x-Q. 37. That is, the core has no accessible interior for the entrance of cold water; so that whatever artificial cooling may have been applied to the interior of the casting was due to conduction

of heat from the core to the base and other metal parts that were actually in contact with cold water?

A. You are correct.

x-Q. 38. I understand that your tests were carried out with the exhibit entitled "Complainant's Exhibit Commercial Joyce Apparatus"?

10 A. With one just like it. My recollection is that this exhibit was the identical one used in making the test with oil in the mold.

x-Q. 39. Was it known prior to Joyce's filing date that the wax-like record composition then in general use would shrink radially to a sufficient amount to permit the ready withdrawal of the casting from an unsplit cylindrical mold?

A. I do not know the facts in this particular.

20 x-Q. 40. (Mr. Muskie interrupts and adds): By the noun "casting" in the previous question, I meant to include the sound-record existing in solid shape within the mold whether formed by the specific process of pouring melted wax or otherwise?

30 A. Personally, I do not know the facts. I understand, however, that there was a contest between Edison and Joyce as to the particular method now inquired of, and that Joyce conceded priority to Edison. I understand, however, that Edison's plan was to take a previously molded cylinder and to expand it by heat (aided possibly by an interior mandrel) so as to get the impression of the sound record of the mold, and then utilize the ensuing contraction to permit endwise separation of mold and record. So far as I know, Joyce was the first to ascertain that there would be a shrinkage between the cast melted material passing from liquid to solid form sufficient to permit endwise separation.

40 x-Q. 41. In your answer to Q. 9, particularly

in the 7th and 8th paragraphs thereof, you refer to the prior art of molding or casting general articles, before the advent of the talking machine. What was the practice in regard to the time for removing such castings, whether they were candles or glass bottles or articles of metal?

A. The time or removal in molding candles seems to have varied widely depending upon the material and the particular method practiced. 10

In making metal castings in sand, the sand is not removed until the casting is sufficiently chilled to maintain its form and not be affected by the removal of the same. This will depend upon the size of the casting. I do not know that I can give any time from observation or available literature.

In the case of casting glass in a metal mold the mold can be removed very quickly after the cast has been made—inside of a minute.

20 Also, in casting soft metals in a split metallic mold I should say from recollection, based on observation that this can be done very quickly, depending upon the amount of metal in the mold to convey away the heat. In some cases, in less than a minute.

30 x-Q. 42. I did not mean to inquire concerning the actual time elapsing. The question is whether in those other arts it was the practice not to separate the casting and the mold until the former had become set and was not in any sense "semi-plastic"?

A. Yes.

40 x-Q. 43. In answer to Q. 6, you refer to the Edison patent No. 414,761 of Nov. 12, 1889, as illustrating the molding of blank phonograph cylinders. What does this Edison 1889 patent teach in regard to the matter inquired of in the two preceding questions,—that is, with regard to

when the casting should be removed from the mold?

A. The Edison patent does not state when the separation should be effected.

x-Q. 44. Assuming that the art prior to talking machines taught that in making castings, the casting must be allowed to become set before it is removed from the mold, and assuming further that this Edison patent of 1889 has taught the public how to mold blank phonograph cylinders of the wax-like soap composition, without changing the teaching of the prior art with regard to the time of removal—what would the ordinary skilled workman do with regard to when he should remove his cast phonograph blank from the unsplit mold of that Edison patent 414,761?

A. He would, I think, experiment and find out the best practice. What has actually been done is to separate the molded blank and core while the material is still soft and warm.

x-Q. 44. In your opinion, the practice just indicated by you would be an improvement and an advance upon the disclosures of the Edison patent No. 414,761, would it not?

A. No, I think it would be the result merely of practically trying the method.

x-Q. 45. Logically, the particular method named in your answer to x-Q. 44 must be either identical with the particular method named in x-Q. 42, or more or less different therefrom. I understand you to admit that specifically the two are different; do you mean that the particular practice named in answer to x-Q. 44, although different specifically, is not an advance or an improvement, but a step backwards?

A. No. Nothing in the outside art referred to in x-Q. 42 indicates when molded blank material should be removed. The Edison patent No. 414,761

does not state when the removal should take place, but leaves it to the judgment of the artisan practicing the method. Hence, there is no standard in the prior art to ascertain whether the removal while still warm should be regarded either as an advance or a retrogression. It is different from the practice in the remote arts.

x-Q. 46. If the skilled workman had the mold of that Edison patent No. 414,761 and undertook with the ordinary record-composition of the period around 1896 to mold phonograph blanks in accordance with the instruction of that same Edison patent, and if he should follow the practice of the earlier casting arts and should permit his casting to become completely set and reach normal room temperature—would he have departed in any particular from the teachings of that Edison patent?

A. No, but I doubt if he could successfully remove the core except by a large percentage of breakage.

x-Q. 47. Assuming the cases where the castings should not be broken, what would be the shape of the exterior of the casting from that Edison mold and what would be the nature of its surface, if the casting had become completely cold before removal?

A. I do not know. The general shape would undoubtedly be cylindrical, and whether or not there would be a smooth surface, I cannot tell without trying it.

x-Q. 48. Have you read the depositions of Macdonald and other employees of defendant herein that were introduced into this case as exhibits?

A. I was not aware that such depositions were introduced.

x-Q. 49. Why would the exterior surface of the casting be cylindrical or at least cylindrical in general shape?

A. Because the mold is cylindrical.
 x-Q. 50. Unless some other factor (such for instance as peculiarity of shrinkage, or the like) should intervene, would not the casting in theory at least have the exact shape of the mold?

A. Yes.

x-Q. 51. And with the same proviso, would not the casting have an exceedingly smooth surface, or a fairly smooth surface, or an irregular surface, depending upon the condition of the surface of the mold?

A. I am unable to say. If, however, some effect did not arise through the action of the material itself, as the result of the solidifying under the stated conditions, I should say theoretically that the molten material would have a smooth surface, and the surface would conform to an irregular mold provided that the mold is not sufficiently irregular to interfere with the free withdrawal of the molded blank.

x-Q. 52. Was not the co-efficient of expansion of the ordinary phonograph-material in common use prior to Joyce's filing date fairly well known to persons in this art?

A. I think so.

x-Q. 53. Without going into the precise figures that composition contracts amply sufficient to cause a clearance between the record-surface of a record-mold, and the minute record-lines produced in the casting, does it not?

A. It does when the mold is artificially chilled on the exterior. What would be the effect without this artificial chilling, I am unable to say.

x-Q. 54. Referring to your statement towards the close of the paragraph headed "Recording Sound" in answer to Q. 6, where you name the Edison British patent did you not testify in the suit upon the Bell & Tainter patent, named in x-Q. 19,

that the making of the "original" sound record in a practical way is first disclosed by said Bell & Tainter patent No. 314,214 and the Tainter patent No. 341,287?

A. I do not recall what I then said, but it is a fact that the first practical commercial successful sound records were made in accordance with the method and apparatus of the Bell & Tainter and Tainter patents. The original Edison phonograph, while it would record and reproduce sounds, (as I recall very distinctly having heard one of them about 1878 or 1879) nevertheless had not then reached what I should regard as a commercial status because the tin-foil had to remain on the machine where the record was made and after a relatively small number of repetitions the record would become much distorted by the reproducing stylus, so that the sounds became indistinct.

x-Q. 55. In the same Q. 6, under the heading "Sound Reproduction," you refer to the Edison sulphite reproducing style. Did you not testify in the former suit above referred to that the first practical apparatus for reproducing sound, with which sound records could be interchangeably employed was disclosed by the said Bell & Tainter patent?

A. I do not recall what I said, but I understand the fact to be as you now state it.

x-Q. 56. Is it your understanding that in the quality of the product, the method practiced by complainant for producing its molded masters, surpasses complainant's method for producing its ultimate duplicates for the market?

A. No, except in so far as that greater care is exercised in carrying out the process in making duplicate masters.

x-Q. 57. Is it your opinion and understanding that if the same care were taken in carrying out

the method described by complainant's rebuttal witnesses for molding the masters, and if exactly the same care were taken by equally skillful workmen in carrying out the method described for making complainant's ultimate records for the market, and assuming the same composition used in each case—then the product in each case would be identical in quality with the product in the other case?

10

A. Yes.

x-Q. 58. Why, then, do you understand that complainant uses one process for molding its masters and the other for molding its article for the market, instead of merely having its most skilled workmen for the former, and the same process in each case?

20

A. I am not advised as to the reasons. Possibly, because there may be greater uniformity in result in the process followed in molding master duplicates.

x-Q. 59. At the outset of your answer to Q. 6 you enumerate the six "chapters" as I may call them, in the production of the ultimate molded record for the market; and at the end of that answer you point out that the exigencies of this art demand these elaborate and peculiar steps. Do you understand that any of the steps employed (1) in producing the blanks or, (2) in making the original cut record, or (3) in making the metallic molds for masters, or (4) in making the further metallic molds for the commercial articles, are set forth in and by any claim here in suit?

30

A. No.

x-Q. 60. Do you understand that any claim of the Miller & Aylsworth process patent or of the Aylsworth and Miller apparatus patent here sued on, recites or covers any steps employed in (4) the making of the molded masters?

40

A. Not specifically, although they might be employed in molding masters.

x-Q. 61. I am inquiring of the specific process described by you in answer to Q. 6, under the heading "Making Duplicate Masters," and as described by complainant's witness Shannon. If this specific form of process is set forth by any claim (in suit) of the two patents just inquired of, please specify such claim or claims.

10

A. The subject matter of claim 5 of the Aylsworth & Miller apparatus patent No. 683,076 is employed in making the duplicate masters; but none of the other pertinent claims of these two patents is employed.

x-Q. 62. In making complainant's molded masters, what "means" for finishing the interior of the duplicate while the latter is in position within the matrix or mold, substantially as set forth" (in claim 6 of the Aylsworth & Miller patent) is employed?

20

A. A raming knife is employed which rams out the material of the molded masters, to bring it to the desired interior shape.

x-Q. 63. In giving your answer, did you have in mind the fact that complainant's molded masters have an interior rib, but the bore is a taper formed by a straight edge?

A. Yes.

x-Q. 64. In your opinion do the mold and other instrumentalities described by complainant's witness Shannon in his answer to Q. 3 and by yourself in your answer to Q. 6, under the heading "Making Duplicate Masters" constitute "means for securing a deposit of a waxlike congealable material upon the bore of a matrix or mold which carries the representation of the record to be duplicated" (being a quotation from the same claim 6 of Aylsworth & Miller)?

30

40

Yes.

x-Q. 65. Is the step (6) of making the ultimate commercial duplicate record, as set out in your answer to Q. 6, covered or set forth in any claim (in suit) of the Joyce patent?

A. No.

x-Q. 66. You have described the steps or process employed by complainant in producing its molded masters and you have likewise described the steps or process complainant employs in molding its commercial duplicates; which of these two (specifically different) processes in your opinion more nearly resembles the specific process described in this record as defendant's process?

A. That is difficult to say, because in each case there are resemblances and differences.

For example, in comparing the molded master process practiced by complainant with defendant's process, they are alike in that the molten material is introduced into the top of the mold, and when the mold is filled with material, both are hot. On the other hand, the two methods differ because complainant does not immerse the mold in the molten wax, but pours the wax into the mold; and complainant does not apply the name to the end of the master record and does not make any concentric ribs on the interior. In these latter respects, defendant's method is more nearly like complainant's way of making the commercial duplicates.

Therefore, it is difficult to compare the resemblances and differences as to processes.

x-Q. 67. Please go back for a moment to x-Q. 64 and indicate the things named by Mr. Shannon in answer to Q. 3 and by yourself in answer to Q. 6 that constitute the "means for securing a deposit of wax-like conglutinate material

upon the bore of the matrix or mold," as set forth in the Aylworth & Miller claim 6?

A. Primarily these means include the mold and the core with the attached bottom, and the removable top ring. Also, to get the molten wax-like material into the mold involves a wax tank, means for heating it, and some way of getting the material from the tank into the mold. The particular means employed by complainant being a vessel with a spout like a coffee pot.

x-Q. 68. Is any one of the things just named by you dispensable, and if so, which?

A. Yes, the tea-pot might be omitted and the mold immersed in the wax-like material, and the separate top ring might probably be omitted.

x-Q. 69. With these possible or probable exceptions *of* of the things named in answer to x-Q. 67 are necessary, are they not, to constitute the "means" inquired of in x-Q. 67?

A. Yes.

x-Q. 70. Could a duplicate sound record obtained by the "means" just enumerated, be allowed to become completely set by reaching normal temperature, and then be subsequently run out by the employment with a suitable reaming-knife of chucks for holding the cylinder at the ends so as not to impinge upon its record-surface?

A. I do not know; I should imagine it could be done, but probably with a large percentage of breakage.

x-Q. 71. Are you familiar with the testimony given in these cases given by defendant's witness, Thomas H. Macdonald, particularly the portion where he refers to the "finishing" of defendant's molded sound record?

A. I read his deposition a couple of months ago but I do not recall distinctly what he said.

x-Q. 72. If a duplicate sound record should be

formed by pressing or expanding, under the influence of heat, an unmelted blank-cylinder within a tubular mold (for instance as described in the De-fendant's Exhibit Edison patent No. 713,209) and while still warm and not yet disengaged from its mold, could its mold be used as a chuck with a straight edge reaming knife to ream out its interior,—or with the particular form of reaming knife

10 shown in the Aylsworth & Miller patent in suit?

A. I think so, unless perhaps the expanding process might require so thin a cylinder initially that it would not stand any reaming which would leave it sufficiently strong.

x-Q. 73. Would the action of the reaming-knife, or the process of reaming, be any different in the case just inquired of from the action of the reaming knife and the process of reaming described in the two patents in suit?

20 A. No, assuming that reaming was permissible by reason of the presence of a sufficient amount of a record material.

x-Q. 74. Do you find that the particular "means" set out in the Aylsworth & Miller patent in suit, for forming the duplicates, in any way affects or modifies the action of the reaming knife, so as to cause it to act otherwise from what it would act under the supposition of x-Q. 72?

30 A. No.

x-Q. 75. Assuming that a cast or otherwise molded sound record obtained as, for instance, in the Edison patent No. 713,209, could after removal from its matrix be successfully reamed out as suggested in my x-Q. 70,—assuming that to be the fact would the action or operation of the "means" for forming that record (whatever they might be), be in any way affected or modified by the subsequent action of the reaming-apparatus or tool?

40 A. No.

x-Q. 76. In the second paragraph of your answer to Q. 9, you observe that the Edison patent No. 382,402, of May 8, 1888, contains no suggestion of how the molding was done. Why was this omitted?

A. I do not know why. Many patents are taken out on mere untried paper projects.

x-Q. 77. Considering that this patent No. 382,402 shows a hollow cylinder composed of wax-like composition, that these materials were well-known to be fusible, and that Mr. Edison says "I prefer to mold the entire phonogram-blank of the one wax-like compound * * *"—would it be a violent assumption to understand that Mr. Edison contemplated that the person to whom the patent was addressed would read it as directing them to employ a cylindrical mold with a central tapering bore?

A. No.

Adjourned to Saturday April 18, 1908.

Met pursuant to adjournment.

Cross-examination of the witness BROWNE continued by Mr. Massie.

Present:

Counsel as before.

April 18, 1908.

x-Q. 78. In your answer to Q. 9 in the eighth paragraph thereof, you refer to the molding of glass bottles in the molds, and say "lettering on glass bottles is thus produced." How is this lettering produced, by what means or devices?

A. The interior of the mold is provided with reverse lettering so that the glass flows into or is blown into the same.

x-Q. 79. Was the same expedient well known

long before the date of Aylsworth & Miller date of application in producing lettering on metal castings?

A. Yes.

x-Q. 80. I understand your position with respect to claim 5 in suit of the Aylsworth & Miller apparatus patent to be that if this claim were merely for an apparatus for molding cylinder records and at the same time producing the lettering thereon, there would be nothing novel about it; but that because the lettering is produced in the particular place, namely, around the annular upper end of the cylinder, so that it can be readily observed, and will not take up room intended for the record-grooves—for this reason the claim in your opinion sets forth a novel device or apparatus which (also in your opinion) involves the quality of "invention." Have I correctly stated your opinion?

A. Not quite. The latter part of your question beginning with the word "because" is correct. The first portion of the question is not correct, because, so far as that statement is concerned, I know of nothing in the prior art showing lack of novelty. On the other hand, as stated in my direct examination, it is unnecessary to consider whether or not such broad subject matter may or may not have been new, since no such subject matter is claimed in the patent. Hence, for the purposes of this case, such broad subject matter might well be conceded to be void of any quality of invention without affecting the actual subject matter of claim 5.

x-Q. 81. Are you aware of the fact that long before Aylsworth & Miller's filing date, it was the common if not universal practice in producing disc sound records to employ reverse lettering in connection with metallic reverse, so that the record-grooves and the lettering were simultaneously im-

pressed upon the ultimate commercial article?

A. No.

x-Q. 82. Are you aware of the fact that for years before Aylsworth & Miller's filing date, it was a frequent practice to scratch or cut, or otherwise produce lettering around the annular end or top of the cylindrical sound record?

A. No.

x-Q. 83. In the ninth paragraph of your answer to Q. 9, you say "manifestly, the making of a sound record by pressure is not applicable to materials which must be rendered fluid before they can effectively conform to the sound record-surface * * *". Why must the record-composition with which we are here dealing be of necessity rendered fluid before it can effectively conform to the sound-record surface? And, are you prepared to state as a matter of fact that the composition must in truth be rendered fluid before it can effectively conform to the sound-record surface of its mold?

A. As to the statement made by me in answer to Q. 9, it seems to me obvious that a material which is rendered liquid and is present in liquid form within a mold, cannot be effectively expanded by any internal pressure, such as is supplied by a mandrel, for example. Internal pressure is unnecessary because the fluid itself is competent to flow into and among the irregularities of its mold.

As to the second proposition in the question, which involves the fluid material itself conforming to the mold surface, my view is that it is impracticable if not wholly impossible for the material itself to perfectly conform to the interior surface of the mold unless it is in a liquid condition. I have never tried to find what the effect might be to introduce record material in a mold in a soft but not liquid condition and then letting it stay there to see what would happen. But, con-

10 considering the fact that in all casting methods, with which I am familiar, either the material itself must be brought to liquid form or some external pressure must be brought to bear when the material is not in liquid form, I am of the opinion that one of the two plans must be adopted if any practical results are to be obtained.

10 The answer is objected to as not responding to the questions asked.

x-Q. 84. Are you familiar with the decision of the United States Circuit Court of Appeals for the Seventh Circuit in the case entitled *National Phonograph Co.* against *Lumbert Co.* rendered Aug. 1, 1905, and reported in Vol. 142 of the Fed. Rep. at page 151 thereof, to the effect among other things that the National Phonograph Company had produced from six thousand to eight thousand commercial duplicate phonograms by the pressing process of the Edison patent No. 713,200?

20 A. I am not familiar with such a decision. I do not recall ever having seen the decision or that I ever had any knowledge or information that there was any such suit.

30 Defendant's counsel gives notice that at the hearing of these causes defendant will refer to the above-entitled decision in the Federal Reporter; and asks complainant's counsel to accept the reported decision in lieu of his certified copy of the same, and of the decrees entered pursuant thereto.

40 By Mr. Dyer: Counsel for complainants is willing that the decision as reported in the Federal Reporter shall be taken in lieu of a certified copy, subject to correction, but objects to any reference to this case by defendant's counsel on the ground that the said decision is incompetent, irrelevant and immaterial, and

the said case was not between the same parties as the parties now in Court.

Defendant's counsel here calls attention to defendant's exhibit, Edison Deposition.

x-Q. 85. Resuming the subject matter of x-Q. 83. Is it not the fact that the ordinary cylinder-material of the period of Joyce's application (which I believe all parties agree is substantially the soap mixture of the Macdonald patent No. 606,725) could be used in making successful molded duplicate sound records, with a continuous or unsuit mold, by the pressing process of the Edison patent No. 713,200 (involving heat and pressure); so that it is not necessary, in order to make molded sound records that the material referred to *must* be rendered fluid?

20 A. I think compared with prior plans, earlier in date than the invention of the said Edison patent, that the pressing method of said Edison patent would produce records in a manner which comparatively speaking, were successful. Hence, I do not think it absolutely necessary to render the material liquid in order to get a useable record.

x-Q. 86. Referring still to the same passage from your answer to Q. 9, is it your meaning that in the specific casting process, (where the material has first been rendered fluid) it is not feasible to apply pressure introducing the duplicate sound record?

30 A. Yes, provided that pressure is an internal pressure.

x-Q. 87. What does the Joyce specification teach the public with regard to the application of internal pressure in producing duplicate sound records by his casting process?

40 A. He suggests that after the wax "has partly set" the tapering core may be screwed down so as

to give an expansive action. Manifestly, this could not be done while the material still is liquid, since such downward screwing would simply raise the level of the liquid.

x-Q. 88. In applying the *pressing* process (such for instance, as set forth in defendant's exhibit Edison Patent No. 713,209) is the application of heat made use of?

10 A. Yes.

x-Q. 89. To what extent should heat be applied in the pressing process; that is, what consistency must the blank cylinder be given?

A. I do not know what the limitations in practice may be. I should judge however, that the material would have to be brought to a plastic condition.

20 x-Q. 90. Assuming that by the *pressing* process molded sound records can be and have been obtained that the exact counterparts of the mold and exact and correct duplicates or copies of the original sound record, must not the plasticity imparted by the heat employed be sufficient to enable the material to enter perfectly into every irregularity of the matrix-surface of the mold?

A. Yes.

30 x-Q. 91. And on the same assumption, and with the same conclusion just stated by you, does the liquid (molten) material enter any more intimately or any more perfectly into the minute irregularities of the matrix-surface of the mold?

A. No.

x-Q. 92. Do you understand that Joyce was the first to disclose the fact that the shrinkage of the record-material was sufficient to affect a clearance between the casting and the mold, sufficient for us to take the casting out of the mold?

40 A. Yes, in case where the casting is formed by

introducing the material in liquid condition into the mold.

x-Q. 93. But before Joyce's date it was known, was it not, that if the material had been introduced into the mold in the form of an unmetall blank cylinder fitting more or less snugly in the mold, and the duplicate then formed by heat and pressure, then upon cooling the thus-molded duplicate would shrink sufficiently to be taken out without injury to its surface?

10 A. Based upon my own examination of the literature of the art I should say no. If there were any such knowledge, so far as I am advised, it was by Mr. Edison and I do not know to what extent the concession of priority by Mr. Joyce to Mr. Edison went.

20 x-Q. 94. Was it not known years prior to Joyce's date that you could melt that same cylinder composition, introduce it while still liquid into an unsplit smooth-bored cylindrical mold, and then when it had become cold, take it out of the mold, the radial contraction being many times greater than the maximum depth of any record groove found in actual practice?

A. No, not that I am aware.

30 x-Q. 95. In Q. 10, you refer to the precautions taken on account of the longitudinal shrinkage of the material. Does this behavior of the material and these precautions have any pertinence with regard to the patent in suit or any claims here sued on?

A. Yes, to the extent that the reproducing mechanism used with the cast record should have a pitch corresponding to the pitch of the cast sound groove.

40 x-Q. 96. Perhaps my question is not properly formulated. Do the patents in suit make any disclosure regarding this matter of having the orig-

inal records of different pitch, etc.; does the patent in suit contribute anything to that particular matter?

A. No.

x-Q. 87. And contrariwise, does the fact of the longitudinal shrinkage of the material and the consequent precaution taken with regard to the coarseness of the pitch of the original cut sound record, contribute anything to the novelty or patentability of any claims here in suit?

A. No.

Adjourned subject to agreement.

Orange, New Jersey, June 19, 1908.

Met pursuant to agreement.

Present:

HENNER H. DYKE, Esq., for complainants.

C. A. L. MASSIE, for defendants.

Cross-examination of the witness BROWNE continued.

x-Q. 98. In former litigation between the parties to these suits (Nat'l Phon. Co. v. American Graph. Co., on Edison patent No. 713,205, pending in the District of Connecticut), Mr. Albert Wurth on April 28, 1904, testifying in West Orange, N. J., in rebuttal for said complainant National Phonograph Company, was asked the following cross-questions, and answered the same as follows, viz:

214 x-Q. Does celluloid shrink enough on cooling it down to be disengaged from the sound-record grooves in a mold?

A. Yes sir; it does.

215 x-Q. Does it have a less or a greater shrinkage than the ordinary wax compositions?

A. It has a greater shrinkage.

216 x-Q. So that there is no difficulty in

shrinking a celluloid record out of a mold after pressing it?

A. No, sir, there is no difficulty whatever."

Do you or do you not agree with this testimony given by Mr. Wurth?

A. Neither. I do not know what the action of celluloid would be under the circumstances, and hence cannot express any opinion as to whether Mr. Wurth is right or wrong.

x-Q. 99. In your answer to Q. 8 (in the fifteenth paragraph) you say that Lloret (U. S. Patent No. 538,373) does not get sufficient separation to slip the celluloid duplicate out endwise, but only sufficient to free the celluloid duplicate from the mold, so that the duplicate can be unscrewed from its mold. How much contraction is necessary to free a celluloid duplicate from its cylindrical mold without permitting it to be slipped out; and how much contraction of said cylindrical celluloid duplicate would be necessary to enable it not only to be freed, but also slipped out of its record-mold?

A. Lloret discloses a peculiar system of recording and reproducing sound. He starts with a screw-threaded cylinder, such as is shown in Fig. 1, and makes a record on it by vibrating through sounds a style in contact with the sharp apices of the screw threads, thus getting sound irregularities as indicated at b in Fig. 1. He then makes by a galvanic plastic method a cylinder such as is shown in Fig. 5, having on its interior screw-threaded grooves and sound irregularities. He then puts a cylinder of celluloid c within the internally grooved cylinder, as indicated in Fig. 7. The whole is then plunged in hot water, thereby softening the celluloid ring which is thereupon forced outwardly by an internal mandrel, such as shown at a 2 in Fig. 8, thus causing the exterior of the celluloid ring to conform not only to the sound irregulari-

ties, but also to the original spiral screw thread. The patent gives no data upon which any estimate of the amounts can be based. The drawings cannot be used as a criterion, because the specifications says:

10 "It may be further mentioned that the threads of the matrix are very fine in practice and are very much exaggerated in the drawings to facilitate the illustrations." (Page 2, lines 124-127.)

I do not know how deep the sound irregularities might be in Lioret's scheme of making them and have no basis on which I can make an estimate. I have no way of determining what Lioret intends when he says that the threads of the matrix are very fine in practice. He shows these threads much deeper than the sound irregularities.

20 The only thing which can be asserted with any plausibility is that he did not get shrinkage enough to remove the celluloid record endwise, because he says that after making the celluloid record:

30 "I then plunge the whole into cold water and the celluloid recovers its hardness and is at the same time generally contracted sufficiently to permit the easy withdrawal of the cylinder c from the mold a' by unscrewing it therefrom. If, however, the contraction of the ring c in this way is not sufficiently greater than that of the mold a', the mold may be slightly warmed by heat externally applied." (Page 2, lines 106-115.)

It seems from this that occasionally at least the shrinkage was insufficient to free the celluloid from the matrix, let alone permitting its endwise withdrawal.

In view of the foregoing I am not able to answer 40 x-Q. 100. Can you assume the cylindrical record

mold of the usual dimensions, having the spiral record ribs of the usual height, and can you assume the average coefficient of expansion and contraction of celluloid, and then answer the foregoing question without any especial limitation to what Lioret may have to say on the subject? That is, with celluloid and such a record-mold, how will the amount of radical contraction compare with the depth of the record-grooves?

10 A. I could not make the assumptions mentioned, but they would be inadequate, because furnishing insufficient data. It would be necessary also to assume the depth of Lioret's screw threads and also to know the coefficient of expansion of the material of the matrix. Lioret dips both his matrix and the enclosed celluloid ring into hot water so that both are heated. Accordingly, lacking these necessary items, I am unable to answer.

20 x-Q. 101. The question was not limited to the Lioret patent. The coefficient of expansion of copper was well-known in 1894 and earlier, was it not; and the record molds known at that date were ordinarily copper, were they not?

30 A. Yes, as to the knowledge of the coefficient of expansion of copper. Whether or not record molds at the date of the Lioret patent were commonly exclusively of copper, I do not know.

x-Q. 102. In the former Connecticut litigation between the same National Phonograph Company and this defendant, on the Edison patent No. 667, 662, Mr. Jonas W. Aylsworth, testifying for the complainant at West Orange, N. J., on October 8, 1903, answered x-Q. 111 in the affirmative, the question and answer being as follows:

40 "111 x-Q. Among the methods of marking blanks with which you have been familiar is one which consists in pouring melted wax into a continuous cylindrical mold, allowing the wax

to solidify, and then removing from the mold by withdrawing it longitudinally?

A. Yes?

In the same suit, and on the same date, in the course of his answer to Q. 43, where he was asked as to the changes in the processes of manufacture carried on by Mr. Edison's phonograph manufacturing concerns, Mr. Aylworth said:

"Some time around about 1895 they began molding by withdrawing the blank from the mold while it was hot and in a semi-plastic condition."

Have you any reason to doubt these statements?

A. I know nothing whatever about the statements in question and have no reason either to doubt or believe them.

x-Q. 102. In your answer to Q. 9 (11th paragraph) you speak of the "irregular unsymmetrical molding surface" of Joyce's mold. Please assume two parallel operations; in one you have Joyce's cylindrical record-mold and in the other you have a blank-mold having a smooth and polished cylindrical bore; and you have, in melted condition, the ordinary wax-like composition of the past ten years. The two molds are heated to the temperature indicated in the Joyce patent as the temperature for his mold, and each mold is filled with that molten material. The two are allowed to stand until the contents have solidified (and this may, if desired, be hastened in each instance by a cold water bath); and thereafter, when the contents have become set, the castings are withdrawn from the two molds.

What difference in behavior will there be; what difference in the amount of contraction radially; and what differences will there be in the processes carried out, and in the resulting articles?

A. There would be no difference in behavior and none in contraction.

The two processes differ only in the production of the differing molds.

The two products would differ, since one would be a sound record and the other a blank.

x-Q. 103. The second paragraph of your answer

means, as I understand it, that the two processes differ because in the one instance you obtain as the result a sound record, and in the other you obtain as the result a blank cylinder; but that the steps taken in each process are identical?

A. No, the steps are not identical. One process involves the making of a mold with a smooth interior surface while the other process involves making a matrix mold with sound irregularities on its bore.

x-Q. 104. Then, in order to differentiate between the two instances, we have to include the step of making the respective molds as a part of the respective processes?

A. Yes.

x-Q. 105. Please assume the same parallel operations indicated in x-Q. 102—except that the record-mold is heated as already stated, while the blank mold is taken at normal temperature. Please state the differences in behavior, and in radial contraction?

A. I should have to make one other assumption, namely that where the record-mold is heated it is subsequently plunged into cold water for cooling, while in the other instance in making the blanks there is no such plunging in cold water. I am obliged to make these assumptions in order to bring the two contrasting processes within my knowledge.

On the basis of these assumptions, I do not know whether there would be sufficient contraction in the

case of the blanks to enable their withdrawal from the molds lengthwise. My experience and observations are limited to forcing the blanks out of the molds while still somewhat soft, so that a rough outer surface is produced which must be subsequently smoothed off with a lathe before a record is made thereon. So far as I know to the contrary, the shrinkage under such circumstances may involve a clinging of the blank material to the interior surface of the mold, the shrinkage, if any, manifesting itself by a shrinkage away from the center.

On the other hand, when the matrix mold with its sound irregularities is heated and it together with the cast cylindrical record material is artificially cooled by immersion in a bath of cold water, there is a preliminary setting of the record material against the matrix surface, followed by a shrinkage of the material, so that it can be subsequently withdrawn endwise from the matrix. There is produced a sound record having a smooth and polished surface, except for the accurately reproduced sound groove. Hence to sum up the matter in making the blanks, I do not know that there is any radial contraction of the blank as a whole, whereas, in making the sound records, there is a final radial contraction sufficient to enable the sound records to be withdrawn. In making the sound records the material behaves in the manner which I have stated and I have no knowledge that such behavior occurs in the making of the blanks.

x-Q.106. Assuming the same parallel instances already inquired of; remembering that in each instance we have the same composition which has, of course, a more or less definite coefficient of expansion and contraction. And recalling that in each instance the ultimate temperature of the casting is the same, this having been reached gradually in the case of the blank, while it has been hastened

by the cold water bath in the case of the record, does the application of the cold water-bath increase the actual amount of contraction?

A. I do not know and am not advised as to what the exact behavior of the blank might be when made as suggested. Materials of this character have different behaviors under different conditions. Analogous instances are shown in the manufacture of castles, which has been referred to in the record. I know that when the mold is heated and it together with the cast composition are immersed in cold water that there is a preliminary clinging of the cast material to the matrix surface which is probably a material factor in producing the final polished surface and the faithful reproduction of the sound groove. This is followed by the radial contraction which is sufficient to permit endwise withdrawal. I think it probable that the metallic matrix mold loses its heat much more rapidly than the record composition, and if this is so, then when both are plunged in cold water the contraction of the record mold would be more rapid than that of the cast composition; and this may be largely instrumental in effecting the quality and character of the sound surface of the sound record.

In any event, I cannot compare this behavior with the assumption concerning the making of blanks, since my own knowledge of blank making is when the blanks are pushed out by still clinging to the mold and while still warm and soft, so that an unfinished surface is produced. Whether or not this would be the case if allowed to cool I do not know.

Whether or not the plunging in cold water results in more or less radial contraction of the cast record as a whole I do not know.

x-Q.107. Joyce was not the first to use a continuous (that is, unsplit) cylindrical record-mold,

was he? I refer for instance, not only to the Lioret patent No. 628,273, and the Young British patent, but also to Mr. Edison's pressing process, as set forth, for instance, in the Edison patent No. 713,209, which I will remind you was allowed after an interference with Joyce, in which the latter conceded priority?

10 A. No, I believe that Joyce was not the first to use a continuous metallic cylindrical matrix mold for making duplicate sound records.

By Mr. Massie: Defendant's counsel gives notice that at the hearing the Court will be referred to the decision of the Court of Appeals for the Seventh Circuit in *National Co. against Lambert Co.*, reported in Vol. 142, of the Federal Reporter at page 164, reference being made particularly to the mention beginning at the bottom of page 165 thereof, to the testimony of Mr. Edison, as to the practice of the pressing system in making duplicate sound records from cylindrical molds.

Complainant's counsel agrees to the use of the report in the Federal Reporter instead of the official record of this case, but objects to any reference to the decision named by defendant's counsel on the ground that the parties to that suit and the issues decided therein are different from the parties and the issues in the present suit.

By Mr. Massie: Defendant's counsel relies upon that reported decision not as *res adjudicata* with reference to the present litigation, but as an admission by the National Phonograph Company and by Mr. Thomas A. Edison that the pressing process substantially as disclosed in the Edison patent No. 713,209 was practiced in this country as early as 1891; and as an admission by the same parties that the duplicate sound records obtained thereby were perfect as far as quality was concerned; an ad-

mission that the said process was carried out successively.

Counsel for complainants reneges his objection to the use of the decision named as reported in the Federal Reporter for the purposes contemplated or for any purpose whatever on the grounds already given.

x-Q. 108. In your answer to Q. 9 (paragraph 3) you refer to the Joyce invention as representing "a turning point in this art," and you add: "practically, the old method has been superseded, and commercial duplicate records are to-day made by casting molten material in a continuous mold."

Do you regard the process set forth in the Miller & Aylsworth, and Aylsworth and Miller patents here in suit as coming within the language last quoted by me? And, if so, in your opinion is the process of making duplicate records, as set forth in those patents, the process which you regard as the Joyce invention?

A. Yes, as to the first branch of the question, and no, as to the second.

x-Q. 109. Then, if it should be assumed that prior to Joyce's date, the world had not succeeded in obtaining duplicate sound records, by casting, from unsplit cylindrical molds; and if now the world has learned how to do this; yet Joyce (in your opinion) discloses one means of getting the result, while the two Miller & Aylsworth patents disclose another and independent and distinct means?

A. Yes.

x-Q. 110. In other words, am I right in saying that Joyce does not disclose the only way of accomplishing that result, viz., obtaining duplicate sound records, by casting from an unsplit cylindrical mold?

A. Yes.

x-Q. 111. When we speak of an invention being a turning point in the art, and refer to the results accomplished, it would seem to indicate that previous investigators had encountered difficulties and obstacles and the "turning point" invention had removed or gotten around those obstacles.

I understand that among the difficulties or obstacles encountered in producing duplicate sound records by molding from an unsplit mold (whether specifically by pressing or by casting) was the liability to entrap air bubbles, and perhaps also some peculiarity in shrinking. If I am correct, please state by what means the Joyce specification overcomes or removes such objection? And, also, by what means the Miller & Aylsworth patents overcome or remove such objection?

A. I do not know that the objections stated have been encountered prior to the patents in suit. Also, I do not think the initial proposition made in the question is invariably true.

x-Q. 112. What then did you mean when towards the close of the third paragraph of your answer to Q. 9, you said "the Joyce invention represents a turning point in the art"?

A. I understand that the practical commercial way of making duplicate sound records prior to Joyce was by the duplicate engraving machines. Since the date of Joyce's invention the practical commercial way is to cast the molten sound record material in a continuous cylindrical mold. This change from one plan to the other I regard as a turning point in the art.

It does not seem to me that the quality of Joyce's invention is affected by the proposition as to whether he knew of the objections to the old duplicating method or not; or whether he had encountered any difficulty himself in making cast records.

Assuming, for illustration, that Joyce had no knowledge of how duplicate records had been made, and that he succeeded the first time trying, I do not think that the quality of his invention would have been affected.

x-Q. 113. Referring to the first paragraph of your answer non-constant that the practical commercial way now employed is Joyce's invention. Assuming that before the date of Joyce's invention, the commercial manner of making duplicates was by means of the duplicating machine, such as in the Macdonald duplicating patent No. 359,866 (named by you near the end of Q. 7), it is also the fact that since the date of Joyce's invention, complainant's have been making duplicate sound records in a practical commercial way by means of the process of the Miller & Aylsworth patent, which is separate and distinct from Joyce's invention. Is this statement correct?

A. Yes.

x-Q. 114. Can you state wherein in your opinion the "Joyce invention" involves the achievements of such quality as to rise to the dignity of "invention"?

A. He did something to promote the progress of the phonographic art. Prior to him there was no known commercial way of making duplicate sound records by casting molten record composition into a continuous hollow cylindrical matrix. He discovered that this could be successfully done by having both matrix and material hot when the material was within the matrix and by then immersing both in cold water. Since then commercial duplicate sound records have been chiefly made by the casting method. This was new and useful, and hence involved invention.

The fact that Joyce did not discover the only way in which the casting operation could be per-

formed and did not get a claim sufficiently comprehensive to cover all ways, does not detract from the quality of his invention. Miller & Aylsworth have since discovered a specifically different way of accomplishing the same results, but this does not detract from the merits of the Joyce performance.

x-Q. 115. I understand your position to be that specifically defendant's process differs from that claimed by Joyce in that Joyce preheats his mold, whereas defendant does not; but that in your opinion these two specifically differing processes are *equivalents*. And that there is no valid reason in the prior art why the doctrine of equivalence should not be invoked in favor of the Joyce patent. Have I correctly stated your views?

A. Yes, so far as your statement goes. I do not think it necessary, however, to consider the question of equivalence in view of the language of the pertinent claims of the Joyce patent, which say nothing about any pre-heating of the mold.

x-Q. 116. In giving your answer and in your answer to Q. 7, have you considered the file wrapper and contents, particularly the matters pointed out in the Musie deposition in regard to the statements made in the prosecution of the Joyce application, concerning pre-heating?

A. Yes.

x-Q. 117. Please assume that in order to obtain a successful result in casting duplicate sound records when the material is introduced into the top of the cylindrical mold, that it is absolutely essential that the mold and its contents must be heated to a considerable temperature (say 150°F.) above the melting point of the composition. Making this assumption, please point out where, if at all, the Joyce specification makes such a disclosure?

A. It is a little difficult for me to make an assumption which I know is not true, which is con-

trary to my own observation. It seems to me like inquiring how one could skate if ice was heavier than water. Nevertheless, making the assumption, then the Joyce patent does not state that the temperature should be any particular number of degrees Fahrenheit above the melting point of the composition, and certainly does not make a statement as to 150°F.

x-Q. 118. I will modify my hypothetical question. Assume that the court should find from the evidence in these cases that in making cast sound records, where the material is poured in at the top that the temperature of the material and of the mold should be about from 70 to 90 degrees F. above the melting point of the material. Where, if at all, does the Joyce patent contain any such teaching?

A. It does not contain any specific statement of temperature. It simply states that the mold should be "heated, preferably, to near the temperature of melted wax," (page 1, line 102). "It also refers to the mold as being "hot" (line 105, page 1) and in several of the claims.

"Near the temperature of melted wax" is perhaps ambiguous. It may mean either above or below the point at which the wax melts; or it may mean that it should be either above or below the temperature of the mass of molten wax. In either event the suggestion is that the temperature should be some where near the selected criterion. Without having any other guide, therefore, in practicing the process the artisan would try all four of the suggested temperatures. If he succeeded with any one (assuming that there was only one at which he could succeed) the disclosure is inadequate. As a practical matter, the temperature of a bath of molten wax varies. As I recall, the record composition reaches a fluid molten condition at about 290°F.

In order to maintain it certainly fluid, it would be reasonable to maintain the temperature above that, say, in the neighborhood of 220 or 300 degrees. Just as when an ice cream maker freezes cream, he employs something materially below the freezing point of the cream.

Now, if a person trying the Joyce method found that he had gotten his best results by having the temperature of the mold near the temperature of the melted wax, and that that desirable temperature was as high as three hundred and sixty degrees or 375 degrees Fahrenheit, I would consider that that excess was fairly within the meaning of the language used in the Joyce specification. I have selected the stated temperatures because they would fall within the excessive temperature above the point at which the wax becomes molten, given in your question. Therefore, I should say under the assumption of the question that while the Joyce patent does not state temperatures in degrees Fahrenheit, yet, it is reasonably deducible therefrom that a temperature from 70 to 90 degrees Fahrenheit above the point at which the composition becomes fluid through heat should be used.

By Mr. Masie: Defendant does not accept as correct the statement as to the adequacy of the disclosure when the artisan has to resort to selective experiments.

x-Q. 119. Please assume that the Court should construe the Joyce patent, directing us to heat the composition to a temperature only a few degrees above its melting point, and to pre-heat the mold to just a few degrees below the temperature first indicated, so that the mold and the wax are of substantially the same temperature. Upon this assumption if a mold be heated to a temperature 30° F below the melting point of the composition, and the latter be heated to a temperature 70° above its

melting point, and thereafter the material be introduced into the mold, chilled, withdrawn, etc.; has the process of the Joyce claims in suit been carried out?

A. Yes. Even assuming that the Court should make this specific finding as to the disclosure, there would be no justification in tying the patent rightly down to the specific degree, since the specification does not so tie it down, and the assumption involves, as I understand, that records could be cast and properly obtained if there should be the difference of a hundred degrees between the mold and the composition.

There is nothing in either specification or claims restricting either the temperature of the melted wax or the temperature of the mold to any specific degree.

The Joyce patent refers to the pouring of the melted wax, thus involving the wax being at a pouring temperature and containing absolutely nothing to restrict the wax as to specific temperatures, so that a still higher temperature would be excluded.

So likewise with the temperature of the mold. It is enough that it should be near the temperature of melting wax, no matter how that language may be construed.

Therefore, for these reasons, I think the specific inference assumed in the question would be a practice of the Joyce method.

x-Q. 120. Assume that the wax is at a temperature of say 150 or even 125 degrees F., and the mold at normal temperature of about 70° F.; and that on account of its greater specific capacity for heat, the wax should raise the temperature of the mold to say 225 degrees F. (the melting point of the wax being 200° F.) has the process of the Joyce claims been carried out?

A. I do not know. I should have to test the proposition before reaching a conclusion.

x-Q. 121. Do I state your views correctly in the following propositions: The process of the Joyce patent cuts for a hot mold, but it is immaterial whether the mold be pre-heated or heated by the introduction of wax. In any case, the two must be "of substantially the same temperature." And the quoted words, the amount of difference of temperature permissible to fall within the claimed process, cannot be ascertained from the patent itself, but would depend upon whether or not the results were useable sound records?

A. No. On the contrary, I think the permissible temperature can be obtained from the patent itself. On the other hand, the patent does not state any limits of temperature beyond which the process would not be feasible or practical. I presume that the heat of the mold might be increased or diminished beyond useable temperatures and likewise with respect to the wax.

The patent states the conditions under which the process can be successfully practiced, but does not state the conditions under which it cannot be successfully practiced. That would have to be found out by experiment.

x-Q. 122. What I am getting at is this. In pouring super-heated wax into a so-called cold mold, the temperature of that mold will be raised. Now to what maximum amount can the temperature of the mold be raised without infringing the Joyce claims here in suit?

A. I do not know. I should have to experiment to reach a conclusion.

x-Q. 123. Please consider the Aylsworth & Miller specific apparatus and the Miller & Aylsworth specific process (subordinating as far as possible the remaining knife and its use, so as to consider

only the formation of the duplicate record). Can the Aylsworth & Miller apparatus of Fig. 1 be used in producing duplicate sound records, except in accordance with the Miller & Aylsworth process? In this question, I am not referring to any matter of scope of the claim, but to the apparatus and process as specifically described.

A. No.

x-Q. 124. In like manner, I ask you if the specific process disclosed in the Miller & Aylsworth patent could be carried out except by using a mold having its bottom opened and having its exterior protected from heat? (as in the apparatus of Fig. 1 of the Aylsworth & Miller patent.)

A. I know of no other way of carrying out the specific process.

x-Q. 125. Can the specific process of the Miller & Aylsworth patent be carried out by the devices shown in the drawings in the Macdonald reissued patents No. 12,005 and 12,096 in evidence herein?

A. No.

x-Q. 126. Can the specific process employed by defendants be carried out by the specific apparatus shown in Fig. 1 of the Aylsworth and Miller patent?

A. No.

x-Q. 127. Can the specific process employed by defendant be carried out by the specific apparatus shown by the Macdonald reissue patent just inquired of?

A. I do not know.

Mr. Massie announces that the cross-examination of Mr. Broene is closed.

Adjourned to 10:30 A. M. June 20, 1908.

REDIRECT EXAMINATION.

Orwings, N. J., June 20, 1908.

Met pursuant to adjournment.

Parties present as before.

Re-direct examination by Mr. DYKE:

10 Rd-Q. 128. In making your answers to x-Q. 124, x-Q. 125 and x-Q. 126, did you consider that the assumption of x-Q. 123 was carried forward into the succeeding question?

By Mr. Massie: Defendant's counsel intended the same assumption to be carried forward into the three succeeding questions.

A. Yes.

20 Rd-Q. 129. In your answer to x-Q. 30, you stated "I have tried the Joyce process in connection with the old composition with successful results." Did you keep any of the records made at that time?

A. Yes. I here produce a record then made out of the ordinary soap composition.

The record produced by the witness is introduced in evidence and marked "Complainant's Exhibit—Record Made from Ordinary Blank Composition by Commercial Joyce Process."

30 By Mr. Massie: The exhibit is objected to as not relevant or pertinent, since the process the witness has described in connection with the exhibit, is not the process described in the Joyce patent in suit. And the title given the exhibit is objected to as misleading on the same grounds.

Rd-Q. 130. From what source did you obtain the material from which this exhibit is made?

40 A. It was taken from the tank of material which was then being used in making blanks in the ordinary course of business in complainant's factory.

Rd-Q. 131. Mr. Massie asked you (x-Q. 34) "in the test made by you did you slightly oil the mold and the core?" To which you replied that you did so on one occasion. Have you preserved any of the records made where the mold was oiled?

A. Yes, and I here produce it.

The record produced by the witness is offered in evidence and marked "Complainant's Exhibit—Record Made after oiling the Mold and Core."

By Mr. Massie: The objections are repeated.

Rd-Q. 132. From what source did you obtain the material from which this material was made?

A. It was from the tank containing the molten material then being used in the molding of master records in the ordinary commercial practice of complainant's factory.

20 Rd-Q. 132. Did you make any additional records at that time which you have retained?

A. Yes, I here produce another record made at that time.

The record last produced by the witness is introduced in evidence and marked "Complainant's Exhibit—Third Joyce Record."

30 By Mr. Massie: The title is objected to as misleading and the exhibit is objected to as without pertinence or relevancy.

Rd-Q. 134. From what source did you obtain the material for making this record?

A. From the vat of material used in the commercial manufacture of master records.

Rd-Q. 135. How, if at all, do you identify the records above introduced into evidence?

40 A. I identify the light colored record "Complainant's Exhibit—Record made from Ordinary Blank Composition by Commercial Joyce Process"

by its color.

I identify "Complainant's Exhibit—Record Made After Oiling the Mold and Core" because it was made in "Complainant's Exhibit Commercial Joyce Apparatus," the record cylinder of which is marked "Dancing with Ma Baby," and on placing the record in a phonograph, this title is audibly sounded.

10 I identify the remaining exhibit "Complainant's Exhibit Third Joyce Record," because I preserved these three records, and this is the third one.

Re-direct examination closed.

Recross examination by Mr. MASSIE:

Rx-Q. 136. What have you to say, if anything, as to the surface appearance of the three records just introduced as indicating the presence of oil?

20 A. The black records have a more polished appearance than the light colored one. It seems to me that the black record made with the oiled mold has a more polished appearance than the other, though the difference is not marked. Both may be somewhat dulled since originally made, but when both were freshly made from the oiled mold they seemed to me to be appreciably more polished in appearance.

30 Rx-Q. 137. The one of the two black ones which to your eye appears the most polished of the three is the article having squared ends and not beveled at either end, which is identified as "Record Made After Oiling Mold and Core." While the "Third Joyce Record" (having one end somewhat beveled) is to your eye more polished than the white record?

A. Yes.

Deposition closed.

40 ARTHUR S. BROWNE.
Certificate waived.

STIPULATION, JUNE 23, 1908.

It is stipulated and agreed by and between the parties to these suits that the Edison Phonograph Works, from a period earlier than 1895 and during the years 1895, 1896, 1897 and 1898, made cylindrical sound-records and also blank cylinders for recording purposes, from a composition substantially that disclosed in formula B in the Macdonald patent No. 606,725, and sold and offered the same for sale throughout the United States during that period; and that during the years 1895, 1896, 1897 and 1898 the defendant manufactured cylindrical sound-records, and also blank cylinders for recording purposes from substantially the same composition, which were sold and offered for sale throughout the United States during that period, by the Columbia Phonograph Company, the sales agent of defendant; and that any records or blanks, or pieces of records or blanks, which were obtained by Maurice Joyce from the store of the Columbia Phonograph Company, at Washington, D. C., within that period, were made from the said composition; but that the composition itself was not otherwise for sale and was not otherwise sold (except in the form of sound-records and blank cylinders); and that the nature of the said composition and the process of manufacturing the same were not known to the public and were first disclosed to the public upon the issuance of the said Macdonald patent No. 606,725, on July 5, 1898.

FRANK I. DYER,
Of Counsel for Complainant.

C. A. L. MASSIE,
Of Counsel for Defendant.

UNITED STATES CIRCUIT COURT,
SOUTHERN DISTRICT OF WEST VIRGINIA.

NATIONAL PHONOGRAPH COMPANY

vs.

10 AMERICAN GRAPHOPHONE COM-
PANY.

*In Equity on
Letters Patent
No. 688,115.*

NATIONAL PHONOGRAPH COMPANY

vs.

20 AMERICAN GRAPHOPHONE COM-
PANY.

*In Equity on
Letters Patent
No. 688,676.*

NEW JESSBY PATENT COMPANY

vs.

30 AMERICAN GRAPHOPHONE COM-
PANY.

*In Equity on
Letters Patent
No. 681,668.*

Complainants' testimony in rebuttal, taken pursuant to notice at the office of Robert Fletcher Rogers, 45 Broadway, New York, N. Y., on December 8th, 1908, at 2 o'clock P. M., before John L. Lotesh, Notary Public, in and for the State of New York and Special Examiner by consent of counsel.

40 PRESENT: Herbert H. Dyke, Esq., on behalf of complainants; C. A. L. Massie, Esq., on behalf of defendant.

By Mr. Massie:—

Defendant's counsel objects to the taking of any further rebuttal testimony at this time, on the ground that the time for taking rebuttal testimony herein has expired, and that complainants' proofs are already constructively closed. The attendance by defendant's counsel is without waiver of this objection and any cross-examination will be *de bene esse* only.

Complainants' counsel replies that the rebuttal proofs in these cases have not been closed and that the times heretofore set by order of the court for taking testimony in these cases have been extended by consent of counsel, defendant's answering testimony having been taken subsequent to the time so set by virtue of such stipulation, and that the time for taking rebuttal testimony has not, therefore, expired.

DEPOSITION OF ROBERT FLETCHER
ROGERS.

ROBERT FLETCHER ROGERS, a witness produced on behalf of complainants, being first duly sworn, deposes and says in answer to interrogatories propounded by Mr. Dyke, as follows:

Q-1 Give your name, age, residence and occupation?

A Robert Fletcher Rogers, attorney at law, 45 Broadway, New York City, legal age.

Q-2 Have you an acquaintance with Mr. Maurice Joyce, the printer and engraver of Washington, D. C., who has testified in these suits?

A I believe I met Mr. Joyce, or had some communication with him some years ago.

Q-3 Do you remember having had any communication with him respecting any duplicate phonograph records?

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A I remember at one time at the instance of Mr. Stilson Hutchins, of Washington, D. C., having some communication with Mr. Joyce, and at his request I sent or delivered to Mr. Easton, of the American Graphophone Company, a record which he wished to be passed upon by that company. The best of my recollection is that this record was subsequently returned to me.

Q-4 Where is that record now, if you know?

10 A To the best of my knowledge and belief, I have it here and now produce it. I think it was not returned to Mr. Joyce and that it has been in the office here since that date. I now produce a record which I believe to be the one in question.

The record produced by the witness is introduced in evidence and the Examiner is requested to mark the same "Complainants' Exhibit, Early Joyce Record."

20 By Mr. Massie:

The exhibit is objected to as irrelevant and immaterial and as not sufficiently identified. It is further objected that the designation given it by complainants' counsel is without proper basis.

Q-5 I hand you two papers and ask you to state what these are, if you know?

30 A These two papers which are marked respectively "Complainants' Exhibit, Easton's Letter to Rogers, July 9, 1898," and "Complainants' Exhibit, Robert Fletcher Rogers's letter to Joyce, July 5, 1898," are unquestionably a portion of the correspondence in the transactions I had at the time. I clearly identify the exhibit marked "Complainants' Exhibit, Robert Fletcher Rogers' Letter to Joyce, July 5, 1898," as a letter signed and unquestionably sent by me to Maurice Joyce, whose name appears thereon, and I recognize the other exhibit marked "Complainants' Exhibit, Easton's Letter to Rogers, July 9, 1898," as a portion of the

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same transactions. I have a distinct recollection that such a letter was sent to me by Mr. Easton, and its inspection at this time amply confirms my recollection, although I should not have been able to have stated its precise contents without having seen it. I do recollect, however, without seeing the letter that its general trend was the same as that set forth in the letter.

Q-6 Have you any further records relative to this transaction of which you know?

A I do not know of any such records at the present time and regard it as doubtful. It is possible that there may be some letters in my files, but I regard it as improbable, for the reason that it was not a matter I was very much interested in, either professionally or in any other way.

Q-7 Do you consider that if such records were found they would add anything to the record of the transaction?

20 By Mr. Massie:

Objected to as incompetent.

A My belief is that the two letters which you showed me indicate very clearly precisely just what occurred at the time. My recollections of the matter correspond to this showing. Of course, I could not say what other letters might show, but I regard it as very doubtful that there are any other letters. The mere fact that I sent the original Easton letter to Mr. Joyce would indicate that it was not a matter in which I was very much interested.

30 Q-8 Will you please examine your files and ascertain if you have there any further correspondence relative to this matter?

A (Witness examines files). I have examined my files and find a letter dated July 5, 1898, written to me and signed by Andrew Derrine, which let-

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ter is largely personal, and relates to other and confidential matters. This letter is dated Madawaska Island, Ivy Lea Postoffice, Ontario, Canada. The only pertinent matter therein is the following words:

10 "By this mail I write to our office about the Misco business and the Joyce Cylinder, and if you do not hear from there in a day or two, please go down and see Mr. Smith or Mr. Cromelin or Mr. Easton. Of course I would like to be present at the exhibition or exhibitions, but the others can judge at least as well as I could."

I do not recollect clearly to what the last sentence refers, or whether he means the exhibitions of the Misco business or of the Joyce cylinder. In fact, I do not recollect what the "Misco" business was.

20 By Mr. Massie:

The answer is objected to, particularly the notation of the Devine letter, as irrelevant and immaterial, and as incompetent as being only part of the correspondence.

(The witness continues). This is all that I have been able to find at the present time.

Q-9 Who is Andrew Devine, from whom you received the letter out of which you have read an extract?

30 A Andrew Devine is an old friend of mine, and was formerly president of the National Typographic Company, of which company I am now president. At the time in question I was the company's attorney, and the letter for the most part relates to company business. He was at one time one of the vice-presidents of the American Graphophone Company, and a director for a long time. Just what his connection is with that company at the present time I have no means of knowing.

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Q-10 Have you looked for the letter referred to in your letter to Joyce, which is in evidence herein, as his letter of the "22nd ult.," to which your letter appears to be an answer?

A I have looked for it as far as I can. I have not been able to find it in any of the files which I thought would most likely contain it.

Direct examination closed.

CROSS-EXAMINATION by Mr. Massie, without waiving the objections already entered.

20 XQ-11 Is it not a fact that the two exhibit letters and the Devine letter set forth practically all that you recollect concerning this Joyce transaction, and that you recollect nothing beyond what appears in those three letters?

A Substantially nothing more than that. I have a recollection that the cylinder was to be formed in a master matrix, but I am unable at this time to give you the details of the process.

XQ-12 Are you able to state as a fact whether or not the cylindrical article which you have produced in your direct examination is a sound record?

A To the best of my knowledge and belief it is; I have never seen it used or tested on a sound reproducing instrument, but it certainly has the appearance of such a cylinder.

30 XQ-13 Are you able to state positively that this article which you produce this afternoon is the very same identical article that you received from Mr. Joyce?

A To the best of my knowledge I believe it is the cylinder which I received back from Mr. Easton, but whether or not Mr. Easton returned me the same cylinder or not, I cannot, of course, swear, as I had made no identifying marks upon it. Of

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course, I do not mean to imply that in any way Mr. Easton would have sent me another cylinder in return.

Deposition closed.

Signature and certificate waived.

STIPULATION, APRIL 20, 1900.

10 It is further stipulated and agreed between the parties as follows: That David W. Dodd, if called as a witness for complainants, would testify that he has had charge of the Wax Departments of complainants for more than three years last past, and is and has been familiar with the materials and processes there used, and that the blank cylinders, employed by complainants for engraving original sound records thereon, are made from a composition set forth in Formule B of the patent to Macdonald, No. 666,725, July 5, 1898, and that it was this composition that complainants' witness, Browne, obtained in making a sound-record referred to by him in answer to redirect questions 129 and 130.

20 The parties, by their counsel, further stipulate and agree that Frank L. Dyer, if called as a witness in behalf of complainants would testify as follows:

30 I live in Montclair, New Jersey, and am General Counsel for the complainant companies, New Jersey Patent Company and National Phonograph Company, having acted in this capacity since the early part of the year 1903. I have had charge of Mr. Edison's patent litigation and other patent matters since 1897. I am thoroughly familiar with all the suits between the National Phonograph 40 Company and allied companies on the one hand,

and the American Graphophone Company and other companies allied therewith on the other hand.

I.

In recent years, this litigation has related to phonograph records and compositions and to processes and apparatuses for use in the manufacture thereof.

10 Mr. Mauro has testified that there have been eight such suits which have been brought by the National Phonograph Company and companies allied therewith against the present defendants and their selling agent, the Columbia Phonograph Company, General, including these three suits in the Southern District of West Virginia, and I think that the brief history given by him of these eight suits is correct so far as it goes. I cannot see what any other cases than the ones now on trial 20 have to do with the issues to be decided by the court, but it may be worth while to call attention to the fact that not all such litigation between these rival interests, has been instituted by the National Phonograph Company, for within the last four years there have been three such suits brought by the defendant against the National Phonograph Company. These suits are as follows:

30 1. American Graphophone Company vs. National Phonograph Company, on Macdonald composition patent, No. 696,726, District of New Jersey, bill filed on April 1, 1905. On June 12, 1908, bill dismissed by consent.

2. American Graphophone Company vs. National Phonograph Company, on Macdonald composition patent, No. 626,709, District of New Jersey, bill filed on April 1, 1905. On June 12, 1908, bill dismissed by consent. 40

3. American Graphophone Company vs. National Phonograph Company, on Macdonald reissued patents, Nos. 12,095 and 12,096, District of New Jersey, bill filed on April 23, 1908. A motion for preliminary injunction and supporting affidavits were filed by complainant with the bill, and answering affidavits were filed on June 1, 1908. Complainants have never pressed this motion for preliminary injunction, and have virtually abandoned it.

Both the suits above numbered, 1 and 2, were dismissed by consent, at the same time that the single suit of the New Jersey Patent Company vs. Columbia Phonograph Company, General, also in the District of New Jersey, which is No. 7 in Mr. Mauro's list on page 231 of the printed joint record in the present suits was dismissed by consent.

II.

The patent to Mr. Edison No. 713,209 sued on in suit No. 1103 in the U. S. Circuit Court of the District of Connecticut, which, with suit No. 1076 in the same court on Edison Patent No. 667,662 (Nos. 2 and 1, respectively, in Mr. Mauro's list), have been referred to by Defendant's witnesses, Mauro and Masnie, as "the Connecticut cases," was for an expanding or pressing process. In the process disclosed in that patent a metal matrix is first formed upon a master record. The master record having been removed, a hollow blank cylinder of wax-like material turned to accurately fit the bore of the matrix, is introduced therein. This blank is then expanded by heat or by pressure applied by means of a tapered core in order that it may receive an impression from the interior surface of the matrix, after which it is contracted by chilling to clear the interlocking surfaces and withdrawn longitudinal-

ly from the matrix. There is no disclosure or suggestion in that patent of a casting process of any kind.

Following a description of the method of obtaining the matrix the process is described in the patent in the following terms (Patent No. 713,209, page 2, lines 4-69):

Having obtained a suitable matrix carrying a negative representation of the original phonographic record to be duplicated, I proceed with the duplication of the records as follows: The blanks which are to receive the duplicate records are preferably composed of a material having a higher coefficient of expansion than that of the matrix or mold, and said blanks are made sufficiently thick to maintain their shape during and after the act of disengagement from the matrix, as will be explained. The blank under normal temperatures is of a diameter very slightly less than the bore of the matrix or mold, whereby the blank may be inserted in the same. After the blank has been thus placed within the matrix or mold both the matrix and the blank contained therein are, or the blank alone is, brought to a higher temperature, whereby the blank will expand and will be brought into intimate contact with the record surface of the matrix or mold, whereby the negative record thereof will be impressed with absolute accuracy upon the surface of the blank. The expansion of the blank into this intimate engagement with the interior of the matrix or mold may be effected in any suitable way, such as by maintaining the matrix or mold, with the blank contained therein, in a heated atmosphere. By making the blank of a material having a higher coefficient of expansion than the matrix or mold the blank will be properly expanded to receive the impression of the record, notwithstanding the fact that both the blank and the matrix or mold may be subjected to the same temperature.

In order to facilitate the operation and make the resulting duplicate record somewhat sharper, I prefer to introduce a tapering mandrel within the blank after the blank has been placed in the matrix or mold and heat applied to the blank, as explained, and to force the mandrel tightly within the blank after the latter has been expanded into engagement with the record, whereby the blank will be further expanded mechanically into absolute intimacy with the record, after which the mandrel will be immediately withdrawn. With blanks made of sufficiently viscous material the entire expansion may be effected mechanically by forcing a tapering mandrel within the same.

After the blank has been expanded, so as to receive the impression of the matrix or mold, it is removed by first shrinking it rapidly in any suitable way, as in a refrigerating chamber, and by then withdrawing the resulting duplicate by a direct longitudinal movement. Owing to the shallowness of the phonographic record groove this rapid shrinkage of the duplicate record effects a sufficient separation of the surfaces of the matrix and of the duplicate record to prevent injury to the surface of the duplicate record due to any longitudinal contraction thereof.

The claims which were in issue in the Connecticut suit No. 1103, were Claims 2 and 3 of Patent No. 713,209, which claims are as follows:

Claim 2: "The method of producing hollow cylindrical phonograms, which consists in obtaining a mold having a reverse phonogram-record on the inner wall of a cylindrical opening, forming a hollow cylindrical plastic phonogram within said mold, releasing the phonogram from the mold by a radial contraction of the phonogram sufficient to entirely clear the surfaces, and removing the phonogram from the mold by direct longitudinal movement."

Claim 3. "The method of producing hollow

cylindrical phonograms which consists in obtaining a mold having a reverse phonogram-record on the inner wall of a cylindrical opening, forming a hollow cylindrical plastic phonogram within said mold, releasing the phonogram from the mold by a reduction in temperature sufficient to entirely clear the surfaces, and removing the phonogram from the mold by direct longitudinal movement."

The process of the defendant in the Connecticut suit No. 1103 (likewise defendant here), which complainants alleged to infringe Patent No. 713,209 there in suit, was a casting process, in the practice of which molten or wax-like material was introduced between a mold and core and steam applied within a jacket surrounding the mold, and after a time the steam was turned off and cold water passed through the jacket to chill the duplicate record and shrink it so that it could be taken out of the mold.

(Transcript Connecticut suit, No. 1103, pages 8 and 9.) Complainants contended in that suit that this casting process infringed the claims above quoted from Edison Patent No. 713,209, because, as was contended, casting a record is a species of "forming" a record, and these claims were directed to "forming" the duplicate record in the mold or matrix. Complainants also contended in that suit that the casting process then practiced by the defendant is the mechanical equivalent of the expanding process disclosed in the said Edison Patent No. 713,209.

Defendant, on the other hand, claimed that Edison Patent No. 713,209 was limited to the expanding process and did not include the casting process which they practiced; and that the casting and expanding processes were not the equivalents of one another, and in these views they were sustained by the decision of the court and the contentions of the

complainants on these points were overruled. Claim 3 of the Edison Patent No. 713,200 differs from Claim 2 of the same patent, as will be seen by comparing the two claims above quoted, only in that Claim 3 is limited to shrinking the duplicate record by a reduction in temperature, while Claim 2 is not so limited. (See testimony of defendant's expert, Cameron, Transcript in Case No. 1103, pages 464 and 465.) Claim 2, therefore, includes Claim 3, which is merely somewhat more specific, and whatever may be said regarding Claim 2 is applicable likewise to Claim 3. In fact, when the Edison and Joyce interference was declared by the Patent Office on this issue, it was stated that this claim "includes the patentable subject-matter of Claims 2 and 3." (Transcript of Connecticut case No. 1103, page 555.)

As has been stated by the defendant's witnesses, Mr. Edison obtained this claim in this patent as the result of an interference with the application which became the Joyce Patent here in suit, No. 831,688, Joyce having, in that interference, conceded priority of invention as defined by this claim to Mr. Edison. As this claim, which afterwards became Claim 2 of the Edison patent, was the only issue of the interference between the Edison application and this application of Joyce (there was another interference issue between the Edison application and a second application made by Mr. Joyce, as appears on page 555 of the Transcript of Record, but Claim 3 was the only claim which involved the Joyce application which eventuated in the patent No. 831,688), it follows that whatever was said or decided in the suit on Edison Patent No. 713,200, upon the issues there presented, applies directly to the only common subject-matter between the Joyce patent in suit and the said Edison Patent. Before continuing with respect to the Connecticut suits on

Patent No. 713,200, I may say that I do not go to the matter of the companion Connecticut suit, No. 1076, on Patent No. 667,662, at any considerable length, for, while this patent was granted to Mr. Edison upon a casting process, it was granted upon an application filed after the filing of the Joyce application, their respective dates of filing being May, 1900, and October, 1897. There was no interference between it and the Joyce application, and it, like Patent No. 713,200, contains no suggestion of the hot mold process of the Joyce patent.

In the Connecticut suit, No. 1103, defendant's expert witness, Cameron, repeatedly stated that Claims 2 and 3 of Patent No. 713,200 (and consequently, for the reasons already given, the matter common to that patent and the Joyce patent) have no application to a casting process, but relate only to the expanding or pressing process, which, he stated, is an entirely different thing. The following are some extracts from Mr. Cameron's testimony, taken from the transcript in the Connecticut suit, No. 1103, upon Patent No. 713,200, and indicating his views upon these subjects:

"The patent in suit appears to be based wholly upon the difference between casting a molten material into the mold, and introducing therein a solid blank which is expanded into close contact with the surface of the mold." (Page 459.)

"So far as the specification is concerned, the use of a liquid or molten material appears to be excluded from contemplation." (Page 460.)

"I, therefore, understand the second step of the claim (Claim 2) to mean bringing a solid impervious material (i. e., a material capable of being molded by the means in contemplation), into contact with the mold surface, as distinguished from bringing a liquid material into contact therewith and permitting the liquid to congeal. It is, to my mind, clear that

this is the line which the patent draws between what is included in and what is excluded from it." (Page 468.)

"I am clear that the expression 'forming' . . . 'a plastic phonogram within said mold,' as this expression is used in Claims 2 and 3 of the patent in suit, cannot be construed to include the act of pouring molten material into the mold and allowing said material to congeal."

"In my opinion, the step or operation described by the words 'forming a hollow cylindrical plastic phonogram' is broad enough to include any operation wherein a hollow blank in a solid state is expanded outwardly against the mold surface and receives the impress thereof, but not broad enough to include the operation of introducing a melted material into the mold and allowing it to congeal so as to receive the configuration of the relief on the interior of the mold." (Pages 467 and 468.)

"I have already pointed out that in complainant's method a solid blank is pressed against the interior surface of the mold, whereas in the method followed by defendant a molten material is poured into the mold. These two steps are radically different. . . ." (Page 504.)

"Referring to the conceded difference which I have pointed out in connection with the alleged fifth point of similarity, i. e., the difference between the pressing and the casting step, Mr. Dyer states that this is not of any importance since one is clearly suggestive of the other. With this opinion I cannot agree. The difference is, in my opinion, a very material one. The casting method is simpler, cheaper, and produces a better duplicate." (Page 505.)

The foregoing extracts are taken from different points in Mr. Cameron's testimony, which is quite a lengthy deposition, and will serve to indicate the position taken by defendant in the Connecticut suit

upon the invention defined by Claim 2 of Edison Patent No. 713,200, and therefore upon the matter common to this patent and to the Joyce patent in suit,—this claim, as I have already stated, being the issue of the interference between those parties. Mr. Massie, testifying as a witness for defendant, has testified that the process now practiced by defendant is the same as the process practiced by the defendant at the time of the bringing of the Connecticut suits and described in detail on pages 8 and 9 of the transcript of the Connecticut suit No. 1103 (this Record, page 288), and whether or not Mr. Massie is correct in his statement that these early and later processes of defendant are the same, each of them is a casting process making use of a hot mold and is within the claims of the Joyce patent in suit. It is apparent, therefore, that if defendant was correct in urging and the court was correct in deciding in Connecticut case No. 1103, that defendant's casting process did not infringe Claims 2 and 3 of Edison Patent 713,200, Joyce's disclaimer of the subject-matter of those claims can have no effect on the claims now waived on, which are for a casting process, and, in addition, cover a process involving the use of a hot mold, neither of which are disclosed or even suggested in said patent No. 713,200 to Edison.

Counsel for complainants introduces in evidence the deposition of Shelton T. Cameron, taken in the suit of National Phonograph Company vs. American Graphophone Company, in the United States Circuit Court for the District of Connecticut, in Equity No. 1103, at Washington, D. C., beginning on March 16, 1904, and the same is marked:

"Complainants' Exhibit—Cameron Deposition in Connecticut suit on Edison Patent, No. 713,200."

It is stipulated that for the testimony from the Connecticut suits referred to in the foregoing stipulation, complainants may refer to the copies of the transcript of record marked for identification on behalf of defendant near the close of the deposition of defendant's witness, C. A. L. Massie, taken on January 3, 1908 (printed record, page 283), as:

10 "Defendant's Transcripts in Connecticut suit on Edison Pressing Process," and—

"Defendant's Exhibit—Transcript in Connecticut suit on Edison Casting Process,"

with the same force and effect as if the said transcripts had been produced and marked for identification on behalf of complainants.

20 Counsel for complainants introduces in evidence the patents listed below, and the same are marked "Complainants' Exhibits," with the following respective designations:

U. S. PATENTS

No. 372,786 of Nov. 8, 1887, to Berliner,
No. 382,417 of May 8, 1888, to Edison,
No. 400,610 of April 2, 1890, to Edison,
No. 490,238 of Sept. 29, 1891, to Heysinger,
No. 606,723 of July 5, 1898, to Macdonald,
No. 670,442 of Mar. 26, 1901, to Painter.

30 British Patent No. 15,223 of 1887 to Berliner.

Complainants' counsel also introduces in evidence a copy, certified under the seal of the United States Circuit Court, for the Second Circuit, in the Southern District of New York, of affidavits of Edward D. Easton, C. A. L. Massie, Philip Mauro and Sholto T. Cameron, filed in a cause entitled
40 "The American Graphophone Company vs. Walcutt & Leeds, Ltd., et al," on March 3, 1908, and

the same is marked "Complainants' Exhibit—Certified Copy of Defendant's Affidavits in its suit against Walcutt & Leeds."

Complainants' counsel also offers in evidence a photograph of the core and one of the molds and one of the bases which were offered in evidence on behalf of complainants in connection with the testimony of Maurice Joyce, taken on February 24, 1908, and forming part of complainants' rebuttal proofs in these three suits, after the answer of the witness to Q-20 (printed record, page 336), and the same is marked "Complainants' Exhibit—Photograph of Joyce Original Mold, Core and Base."

Complainants' counsel offers in evidence two photographs of the Commercial Joyce Apparatus which was introduced in evidence on behalf of complainants in connection with the testimony of Martin Shannon, forming part of complainants' rebuttal proofs in these three suits and taken on March 4, 1908, after the witness's answer to X Q-24 (printed record, pages 327-8), and the said photographs are marked:

"Complainants' Exhibit—Photograph of Commercial Joyce Apparatus Unassembled,"

and—
"Complainants' Exhibit—Photograph of Commercial Joyce Apparatus Assembled."

30 Complainants' counsel also offers in evidence, in these three suits, three photographs of the mold and reaming tool offered in evidence in connection with the deposition of Peter Weber in the suit on Patent No. 633,615, and taken on November 3, 1905, and introduced in evidence at the close of the witness' answer to Q-9 of his deposition (printed record, page 20), and the same are marked:

40 "Complainants' Exhibit—Photograph of Weber's Reproduction of Defendant's Reaming Tool."

"Complainants' Exhibit—Photograph of Weber's Reproduction of Defendant's Mold and Core Unassembled;"

"Complainants' Exhibit—Photograph of Weber's Reproduction of Defendant's Mold and Core Assembled."

It is stipulated that the said exhibits offered in connection with the Weber deposition in suit on Patent No. 683,615, at the close of the witness's answer to Q.9 of his deposition, and marked "Complainants' Exhibit—Weber Reproduction of Defendants' Mold," and "Complainants' Exhibit—Weber Reproduction of Defendant's Reaming Tool," may be used in each of these three suits with the same force and effect as if regularly introduced in each of the said suits.

It is stipulated that all testimony produced in these suits and filed by either party and in which the signature of the witness and the certificate of the Examiner are waived, may be filed by the Clerk with the same force and effect as if signed by the witness and accompanied by the proper certificate of the Examiner.

It is stipulated that counsel for neither party need serve briefs upon opposing counsel until the day of the argument upon final hearing.

Defendant's counsel consents to the foregoing stipulations without waiver of his right to make all proper objections thereto, and without waiver of the objection noted on December 8, 1908, before the deposition of Robert Fletcher Rogers, which latter objection is repeated to the foregoing stipulations.

Defendant's counsel objects to the stipulated testimony of David Dodd and of Frank L. Dyer, as well as to the exhibits offered in evidence, on the ground that the same are irrelevant and immaterial.

Mr. Dyer's stipulated reference to the decision of the U. S. Circuit Court for the District of Connecticut, in the so-called "Connecticut litigation," is further objected to as incompetent, on the ground that the opinion of that court (reported in 135 Federal Reporter 809) speaks for itself.

Complainants' Exhibit—Certified Copy of Defendant's Affidavits in its suit against Walcutt & Leeds, is further objected to as incompetent to prove any issue in the present litigation.

Complainants' counsel gives notice of the close of its rebuttal proofs, this 29th day of April, 1909.

HERBERT H. DYKE,
Of Counsel for Complainants.

C. A. L. MASSIE,
Of Counsel for Defendant.

**Legal Department Records
Phonograph - Case Files**

***National Phonograph Company v. American Graphophone Company
and Columbia Phonograph Company, General
(Edison Patent 454,941)***

***National Phonograph Company v. American Graphophone Company
and Columbia Phonograph Company, General
(proposed suit)***

***National Phonograph Company v. American Graphophone Company
and Columbia Phonograph Company, General
(Edison Patents 397,280 and 430,278)***

This folder contains material pertaining to three suits brought or considered by the National Phonograph Co. against the American Graphophone Co. and its sales company, the Columbia Phonograph Co., General. The first case was initiated during January 1903 in the U.S. Circuit Court for the Southern District of New York and involved Edison U.S. Patent 454,941 on a built-up diaphragm. The selected items consist of correspondence and memoranda pertaining to Edison's deposition in the case. The second suit was considered by Edison and his attorneys during August 1904 and involved charges of unfair competition. The selected items consist of correspondence and the proposed bill of complaint. The third case was initiated during October 1904 in the U.S. Circuit Court for the District of Connecticut and involved Edison's U.S. Patents 397,280 and 430,278 on a floating-weight reproducer. The selected items consist of the bill of complaint and Edison's affidavit.

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Nat Photo Co }
vs
Am. Graph Co }

Newark Oct 28 1903

Dear Mr Edison.

Return your draft of deposition with two slight changes on page 2. I don't think that it is safe to say that the diaphragm has "a bodily movement up and down". All vibrating bodies vibrate in waves except when giving out their fundamental tone. Most of the sounds now produced by a diaphragm run up into thousands of vibrations a second. The diaphragm does hardly move up and down with that speed. ~~It~~ The laminated diaphragm however vibrates as a whole, i.e. in relation to one fixed point where the style is attached, and not "locally" i.e. in relation to various points, as a thin plane diaphragm does..

I will expect to take your deposition tomorrow
at 11 A.M.

Yours truly
Howard W. Hayes

Thos. A. Edison Esq

[ENCLOSURE]

MEMORANDUM FOR MR. EDISON'S DEPOSITION.

-----o-----

Q-1. What is your name, age, residence and occupation?

A. Thomas A. Edison; age 56; Llewellyn Park, Orange, New Jersey; Inventor.

Q-2. Are you the patentee mentioned in letters patent, No. 454,941, being the letters patent in suit?

A. I am.

Q-3. Please state the circumstances, as nearly as you can recall them, under which the invention of this patent was made.

A. When I resumed my work on the phonograph in 1887 I determined to make it a practical, commercial instrument, which, of course, was not true of the original tinfoil phonograph. In this work, which occupied several years of my time, I made many thousand experiments, on which I spent a great deal of money. The phonograph in its present state of commercial development is not the result of any one particular invention, but is the result of a large number of small inventions all contributing to the desired end. Among these was the use of an all-wax blank, and also a blank having a tapered bore so as to be removably secured on the phonograph mandrel; and also the employment of a compensating weight to keep the reproducer stylus in proper engagement with the record, notwithstanding irregularities in the latter, and the use of a round edge recording knife with a ball shaped reproducer; and also the employment of sapphire as the material from which to make the stylus - all these inventions made the phonograph a commercial apparatus, and they have been largely adopted in the art by manufacturers of apparatus of the phonograph type. Among the large number of inventions which I made during the development of the

[ENCLOSURE]

phonograph was the invention of the patent in suit, which relates to the diaphragm. I found that when a diaphragm was used for reproducing it required a considerable amount of energy to vibrate it, and consequently there was an undesirably great wear of the delicate record surface. This wear was increased if the record was loud and deep, because in that case the diaphragm required to be vibrated through a greater amplitude, and its resistance increased with the amplitude. In order to overcome this defect I attempted to make use of extremely thin diaphragms, which could be vibrated more readily and, consequently, with less wear upon the record surface. I soon found, however, that very thin sensitive diaphragms were comparatively flabby and vibrated locally, so that much of the energy was expended in vibrating the diaphragms locally instead of giving the diaphragm bodily movements ^{as a whole} up and down, which are necessary to secure good reproduction. I, therefore, quickly ascertained that the reproductions obtained with very thin, sensitive diaphragms were too faint for practical purposes. At the same time, if the diaphragm was made thick enough so as not to vibrate locally, it resulted in enormous wear on the record surface. I then determined, if possible, to produce a diaphragm which should have the sound reproducing qualities of a very thick diaphragm and, at the same time, which would not impose any greater wear on the record surface than a very thin diaphragm. After considerable thought and experiment, I produced the diaphragm of the patent in suit, which I found answered my purposes very perfectly. With that diaphragm in its preferred form I make use of a very thin sensitive diaphragm, clamped at the edges in the usual way, and provided with one or more superposed disks of less diameter and preferably of greater thickness and made of the same material, such as glass or mica. Such a diaphragm is

[ENCLOSURE]

really a laminated diaphragm, formed of a series of disks of gradually reduced diameter, and preferably of increasing thickness. I found that when a diaphragm is made in this way the very thin disk yields readily so as not to produce undue wear on the record surface, while the superposed disks produce stiffness and prevent local vibrations, so that the effect secured is as good as when a very thick diaphragm is used without the disadvantage of such a construction. The diaphragm in question, as covered by the patent in suit, was gotten up particularly for reproducing purposes, as it finds its principal utility in that field and is now used not only by the manufacturers of the phonograph, but also by the makers of the graphophone, the present defendants herein. The diaphragm is, however, capable of effective use in recorders, as it enables the diaphragm to be made very sensitive while, at the same time, the maximum amplitude is imparted to the recording stylus, which would not be true if the diaphragm were equally thin and sensitive at all portions. In the latter case a very thin, sensitive recording diaphragm would vibrate locally so as to detract from the amplitude of the recording stylus.

HOWARD W. HAYES.

WILLIAM PELZER.
FREDERICK S. FISCHER.
LOUIS W. SANDERS.
JOHN E. HELM.
DELOS HOLDEN.

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NEWARK,
WORTLEY, NEW YORK.

Newark, N. J., Nov. 24-1903.

Nat. Photo. Co.,
vs.
Am. Grapho. Co.

Frank L. Dyer, Esq.,
Edison Laboratory,
Orange, N. J.

Dear Sir:-

I have been thinking a great deal about the depositions in the built-up diaphragm case. I see no objections to Mr. Edison testifying on the lines indicated in his memorandum, but I think it very important that in your deposition you should elaborate the difficulties to be overcome and the way they were overcome as indicated in the proposition drawn by me. The main trouble you will have in the case will be to show that in view of the prior Art, there was any invention in getting up the diaphragm, and Mr. Edison's theory as to the difficulty to be overcome and the way it was overcome may not seem to show inventive ability, but if the matter is elaborated as I suggested, it would show the court that perfecting the diaphragm in this way was the result of long scientific study and experiment, and I am sure would impress the court very favorably. There is nothing to be lost by putting it in and in my opinion a great deal to be gained.

In regard to the claims.

In my judgment the wise course for us to pursue is at the hearing to stand only on claim No. 3. By that I do not mean to abandon the other claims, but simply to ignore them, so that in

Frank L. Dyer, Esq., Page 2.

this case we stand on the infringement of claim 3. Nothing can be lost by this mode of procedure. If we can get an injunction on any claim we certainly can get it on the third claim.

In the same way the question of the recorder will not come up in any way, as no infringement of that is shown.

I am strongly apposed to bringing in the other two claims in this suit where they are not necessary and thus running the risk of their possibly being knocked out on account of a full discussion of their merits not being presented to the court as not involved in the infringement shown. I understand that Mr. Edison values these claims highly, as a result of experiments he is now making. Leaving them out of the discussion, the effect would be the same as if they were in a separate patent and they can be used any time in the future to sustain any valuable device which Mr. Edison hereafter may put on the market. Your principal trouble will be to distinguish functionally between a phonograph diaphragm and a telephone diaphragm, but cutting out the recorder from the patent would not help us in the least in regard to this. The principal difference which I can see between them is that the ordinary telephone diaphragm is under constant strain throughout it's whole surface by the action of the magnets, while the phonograph reproducer is either under no strain at all or only at a point where the reproducing stylus is attached to it. This would make a vast difference in the way the two diaphragms would act acoustically. I would be glad to see your draft of your deposition as soon as you get it out.

HWH/ED.

Yours truly,

Howard W. Sawyer
70

Dec.1,1903.

Memorandum re Built-up Diaphragm suit.

In order to determine the superiority of built-up diaphragms as compared with plain diaphragms, I requested the foreman of the diaphragm department to furnish me with four standard Model C speakers with different diaphragms, but as nearly alike as possible in all other respects. The first of these No.225,395, had a regular stock built-up diaphragm; the second No.227,615, had a plain diaphragm .0015 in thickness; the third No.227,617, had a plain diaphragm .0025 in thickness; and the fourth No.227,616, had a plain diaphragm .0035 in thickness. On December 1st,1903, I handed the four speakers in question to Albert Wurth and requested him to inform me which of the four diaphragms was the best. After testing them he decided without any hesitancy on the regular built-up diaphragm. I then handed the four speakers to Mr. Wangeman and requested him to make a comparison thereof, which he did, the regular built-up diaphragm being very superior and the plain diaphragms being selected in the order of their thickness, the thickest being the best. I then handed the speakers to Walter Miller and requested him to make a similar investigation which he did with two of his assistants, Messrs Werner and Harvey. These three gentlemen kept separate and independent memorandum of their impressions. According to Mr. Miller the built-up diaphragm was rated at 60, the .0035 at 40, the .0025 at 30 and the .0015 at 20. According to Werner the built-up diaphragm was rated at 100, the .0035 at 75, the .0025 at 50 and the .0015 at 25. According to Harvey the built-up diaphragm was marked "Good", the .0035 was marked "Second Best", and the two others were marked "N.G.". Memorandum attached hereto.

[ATTACHMENT]

1 Hollow $\frac{257}{1000}$ 3 mt

2 Louder at sea $\frac{357}{1000}$ 2 mt

3 Louder better $\frac{417}{1000}$ best

4 Hollow $\frac{1571}{1000}$ 4 ds

Waugemann Dec. 1, 1903

[ATTACHMENT]

Dec 1st 1913

227817	1	30	} <i>L. A. Miller</i>
225396	2	60	
227615	3	20	
227616	4	40	

1. 2. 3. 4.

100 100 25 75
119. But 44. Second
Buck

Change

Wanam.

Wanam

1	<i>N.Y.</i>
2	<i>Good</i>
3	<i>N.Y.</i>
4	<i>2nd But.</i>

"Gold Moulded Records"

Jan. 25, 1904.

William E. Gilmore, Esq., President,
National Phonograph Company,
Orange, N. J.

Dear Sir:

In accordance with your request, I have made a rather hurried examination, through the authorities, on the subject of unfair competition, to determine whether we could probably succeed in an action against the Graphophone Company for the use of the expression "gold moulded" in describing their records.

It was held in the case of Sterling Remedy Co. vs. Eureka Chemical & Manufacturing Co., 80 Fed. Rep. 105, that "the test of infringement is whether the alleged infringing article is so dressed that it is likely to deceive persons of ordinary intelligence in exercise of the slight care ordinarily bestowed in purchasing an article, to mistake one man's goods for the goods of another", and in a later case (Keuffel & Esser Company vs. H. S. Crocker Co., 118 Fed. Rep. 187) the courts said: "Where a complainant has been in business for many years, and has built up a high reputation and large sale for his goods, rendering its good will valuable, the law requires another, entering the market as a competitor, to use such method of wrapping, labeling and cataloging of his packages as not to lead an

William E. Gilmore -2-

intending purchaser of ordinary intelligence, using ordinary care, into the mistaken belief that he is purchasing the goods of complainant."

In the present case, the fact that the expression "gold moulded" is descriptive of our own goods as well as those made by the Graphophone Company is not important, because it has been held that "where the question is simply one of unfair competition, it is not essential that there should be any exclusive or proprietary right in the words or labels used". (Pillsbury-Washburn Flour-Mills Co. vs. Eagle, 86 Fed. Rep. 608).

In the present case, it seems to me that the history of the moulded record business shows an intent on the part of the Graphophone Company to imitate our business methods in many ways, and to put out its goods in such a way as to be likely to deceive the public. In the first place, hearing that we contemplated making mould-records, they also undertook to produce such articles, so that they were able to get on the market very shortly after the Edison moulded records appeared. In doing this, we say that they infringed our patents, and that is a question which must be decided in the infringement suits now pending.

In the next place, when the Edison records were put out, a special composition was used, so that a very hard record would be obtained, and we find the Graphophone records a substantial imitation of our own in this respect.

In the next place, in order that the Edison records might have a distinctive and novel appearance, the composition was colored black by the introduction of lamp black, and in this respect we

William B. Gilmore -3-

find that the Graphophone records also are exact copies.

In the next place, after we got our records on the market, and began to call them "gold moulded records", we found that the Graphophone Company make use of this very expression in designating their own product.

Finally, it is to be observed that in the spelling of the word "moulded" we depart from the ordinary American acceptation thereof ("molded"), and use the English spelling, and we find that even in this idiosyncrasy the Graphophone Company have followed in our footsteps.

Now what was the purpose of the Graphophone Company in thus copying us, unless it was to receive some benefit by doing so? Admitting, for the sake of argument, that they considered themselves justified in making moulded records at all, why was it necessary for them to change their composition, and if they changed their composition, why was it necessary that they should make a black composition, and why did they use the expression "gold moulded", and finally, why did they spell the word "moulded" in the same way that we spelled it? It seems to me that the only answer which can be given to these questions is, that the Graphophone Company expected in some way to be benefited by these counterfeiting operations, and I believe that this can be fairly considered unfair competition.

A few cases of unfair competition in the past may interest you:

In The Sawyer Crystal Blue Co. vs. Hubbard, 32 Fed. Rep. 368, the complainant's liquid blue had been put up in bottles with bright metallic caps having six perforations. Defendant put up

William E. Gilmore -4-

blueing in similar bottles, and this use was enjoined.

In Cook & Bernheimer Co. vs. Ross, 73 Fed. Rep. 203, the complainant had built up a large trade in Mt. Vernon whiskey put up in square bottles. The defendant had previously been bottling this whiskey in ordinary bottles, but finally adopted the square bottles. In this case the court (Judge Lacombe) said:

"Despite defendants' denials - and they only deny intent to deceive the public, not intent to use a form of package just like complainants - the court cannot escape the conviction that they found the square-shaped bottle 'convenient and useful' because it was calculated to increase the sale of their goods; and that such increase, if increase there be, is due to the circumstance that the purchasers from defendants have a reasonable expectation that the ultimate consumer, deceived by the shape, will mistake the bottle for one of complainant's. This unfair competition within the authorities, and should be restrained."

In Shaw Stocking Co. vs. Mack et al., 12 Fed. Rep. 707, complainant's goods were put up in boxes marked with the trademark "Shawmit", and certain arbitrary numbers for the different styles. The defendants' goods were marked "Seamless", arranged in the same kind of printing, and using the same arbitrary numbers. This was regarded as unfair competition, and was stopped.

In Morgan's Sons Co. vs. Wendover et al., 43 Fed. Rep. 420, decided in this Circuit, the evidence showed that when customers went into defendant's store and asked for sapollo, they were given a different soap called "Pride of the kitchen" The court said, "The case falls clearly within the principle that equity should

William E. Gilmore -5-

prevent a party from fraudulently availing himself of the trademark of another, which has already obtained currency and value in the market, by whatever means he may devise for that purpose. The defendants had no right to represent, by word of mouth or by act, directly or indirectly, that "Pride of the Kitchen" was sapollo, and yet this is what the acts of that agent amount to. Such acts should be restrained."

In Humphrey's Specific Homeopathic Medicine Company vs. Wenz, 14 Fed. Rep. 250, the complainant for many years had been putting up homeopathic specifics which were identified by certain arbitrary numbers. The defendant used the same numbers, but swore "that adopting the same numbers which Humphrey has used was purely accidental". An injunction was granted, nevertheless, and the court said: "If this was accident and not intention, it is one of the most remarkable coincidences that ever occurred, and is a serious tax upon human credulity."

In the National Biscuit Company vs. Baker et al., 75 Fed. Rep. 135, complainant's goods were put up in special packages and identified by the trademark "Unesda". The defendant imitated these packages, but used the word "Iwanta". Judge Lacombe, in deciding this case, said, "Here, too, we have the manufacturer of the articles complained of, who explains, as usual, that in adopting a trade name by which to identify his own product, he has been most 'careful not to trespass on any rights' of complainant, and that 'after considerable thought', he selected a name which would make the difference between his goods and complainant's' distinct and plain, so that there could be no possibility of mistake'. It is a curious

William E. Gilmore -6-

fact that so many manufacturers of proprietary articles, when confronted with some well-advertised trade name or mark of a rightful manufacture, seem to find their inventive faculties singularly unresponsive in their efforts to differentiate. Thus, in one case, 'Cottolene' before him, defendant's best effort at differentiation resulted in 'Cottoleo', and 'Mongolia' seemed to another ~~the~~ defendant entirely unlike 'Magnolia'. The manufacturer of the articles which defendants in the case at bar are selling, seemed to have had no better luck, for, with the word "Uneseda" before him, his device to avoid confusion, was the adoption of the word 'Iwanta'."

From these cases, you will see that the courts have gone a long way to prevent the use of words, labels, colors, forms of packages, etc., evidently adopted in imitation of other goods, and I believe as strong an instance of unfair competition could be made out in the present case as in any of the cases above referred to. Of course this assumes that the expression "gold moulded" was first used with Edison records, and that the public to some extent associates the expression with such records.

It would be very helpful to us if we could secure the evidence of some one who in asking for "gold moulded records" expected to get Edison goods, but received Columbian goods instead. Do you know of any such instance having arisen in the past, or can such evidence be now secured?

Yours very truly,

WLD-EP.

W. E. GILMORE,
PRESIDENT & GENERAL MANAGER.

ADDRESS REPLY TO THIS COMMUNICATION TO ORANGE, N. J.

J. F. RANDOLPH,
SECRETARY & TREASURER.

NATIONAL PHONOGRAPH CO.

EDISON LABORATORY, ORANGE, N. J.

OFFICE AND SALESROOM.

IN REPLYING TO THIS LETTER

136-137-138 AVENUE
30 CHAMBERS STREET, NEW YORK

CHICAGO OFFICE, 240 WABASH AVENUE,
FIFTH FLOOR, 40 CHAMBERS ST., N. Y.

PLEASE MENTION THESE INITIALS.

Orange, N. J.

Feb. 8, 1904.

Frank L. Dyer, Esq.,

Laboratory.

Dear Sir:

Referring to your letter of Jan. 25th, and the conversations that we have had relative to bringing action against the Graphophone Co. for using the words "Gold Moulded" in describing their records, after discussing this matter quite fully with Mr. Edison it has been decided that you shall proceed against them. I think it would be wise for you and I to get together so as to decide to whom we will give the case. We have got to get an active man and one right up to date.

I think it would be wise, also, to bring up the last paragraph of your letter so that we can discuss that. I am holding the letter on my desk.

Yours very truly,

W. E. Gilmore
President.

WEG/LWW

R. J. D.

Unfair Competition.

May 11, 1904.

American Graphophone Company,
Bridgeport, Conn.

Gentlemen:-

When the National Phonograph Company put its new molded records on the market in February 1902, they were characterized in the respects, first, that the records were very hard, polished and intensely black and, second, they were provided on their interior with parallel ribs. The molded records first manufactured by the American Graphophone Company and sold by the Columbia Phonograph Company, and which were first put on the market about March 1, 1902, were entirely different in character from Edison molded records, although made by what I regard as a process infringing the Edison patents. These first Columbia records were comparatively soft and were so advertised by you, of a brown color, and were provided with a single spiral rib. The Edison molded records and the first Columbia molded records were therefore dissimilar in appearance, and the public would not be likely to mistake one for the other.

A few months ago, the American Graphophone Co. began the manufacture of, and the Columbia Phonograph Co. sold, molded records which can with difficulty in my opinion, except as to quality, be distinguished from the Edison molded records, because

American Graphophone Co. 2.

they are hard, black, polished and are provided with parallel ribs. To the eye it is very difficult to distinguish the two records apart, and the copying by you of our goods I regard as unfair competition by which you expected to receive some benefit commercially. Subsequent to the introduction of the present Columbia record, the National Phonograph Company, in order that a distinctive name might be applied to its records, adopted the expression - "Gold Moulded Records" which it has extensively used in its advertising matter and which the public associates with Edison records.

Since this expression was adopted by the National Phonograph Company, the American Graphophone Co. and the Columbia Phonograph Company began to apply the same expression to their records, and this I think indicates another instance of unfair competition.

I, therefore, write for the purpose of requesting that you desist from the manufacture of records so closely approaching Edison "Gold Moulded Records" in appearance, as to be likely to mislead the public, and further that you desist from using the expression "Gold Moulded" in connection with your records. I am writing a similar letter to-day to the Columbia Phonograph Co. Kindly let me hear from you in reference to this matter.

Yours very truly,

W.D./M.

July 26th, 1904.

Wm. E. Gilmore, Esq.,
National Phonograph Company,
Orange, N.J.

Dear Sir:-

I send you herewith, a copy of the proposed form of Bill to be filed in the suit against the American Graphophone Company and the Columbia Phonograph Company, for unfair competition in the sale of records.

Very truly yours,

DH/ARK.

Enc.

[ATTACHMENT]

86-1

UNITED STATES CIRCUIT COURT
DISTRICT OF NEW JERSEY.

NATIONAL PHONOGRAPH COMPANY,

Complainant, :

vs. :

IN EQUITY. :

AMERICAN GRAPHOPHONE COMPANY, and
COLUMBIA PHONOGRAPH COMPANY, :

Defendants. :

TO THE HONORABLE THE JUDGES OF THE CIRCUIT
COURT OF THE UNITED STATES FOR THE DISTRICT OF NEW JERSEY.

National Phonograph Company, a corporation duly organized and existing under and by virtue of the laws of the State of New Jersey, and having its principal office at West Orange, County of Essex in said State, brings this, its Bill of Complaint against the American Graphophone Company and Columbia Phonograph Company, corporations organized and existing under and by virtue of the laws of the State of West Virginia, and having a joint place of business at Paterson, Passaic County, State of New Jersey, and in said District.

And thereupon your orator, complains and says:

1. Your orator avers that ever since its incorporation in 1896, it has been engaged in the manufacture at its factory at West Orange, New Jersey, of phonograph records, and in the sale of such phonograph records, and in the sale

[ATTACHMENT]

of phonographs manufactured for your orator by the Edison Phonograph Works, said phonographs and phonograph records being manufactured and sold under patents granted to Thomas A. Edison; and your orator alleges on information and belief, that the defendant, American Graphophone Company, for many years past has manufactured at Bridgeport, Connecticut, a special type of phonograph, known as the graphophone, and records therefor, under license of certain of said patents of Thomas A. Edison, which graphophones and records have been sold by defendant, Columbia Phonograph Company; and your orator alleges that phonograph records and graphophone records are of substantially the same size so that either may be used interchangeably upon phonographs or graphophones.

2. Your orator alleges that since February 1, 1902, your orator has manufactured and sold to the extent of many millions annually, a new and distinct type of phonograph molded records, having certain special and unique characteristics, by reason of which said molded records have been associated in the public mind with your orator's name and reputation; said phonograph molded records were and are ^{of} a brilliant polished appearance, of an intensely black color, very hard and durable and provided on their interior with a series of concentric ribs for engaging the mandrel of the phonograph.

3. Your orator alleges that for the manufacture of said phonograph molded records, it employs intricate and complicated processes, necessitating labor of the highest skill and involving tedious and expensive operations, and your orator employs musical, artistic and dramatic performers of the highest skill and ability, so that the said molded records sold by your orator are of a very superior

[ATTACHMENT]

quality, and have always been recognized as such by the public.

4. Your orator, on information and belief, alleges that the defendant, Columbia Phonograph Company, has been always an active competitor in the business of selling talking machine records for use on phonographs and graphophones, and that prior to about the first day of July, 1903, the defendants made and sold molded records having certain peculiarities by which they were fully distinguished in appearance from the molded records made and sold by your orator, inasmuch as the said molded records made and sold by defendants were of a dull brown color, were quite soft, and were so advertised by defendants, and were provided on their interior with a single spiral rib. The said molded records made and sold by defendants prior to about the first day of July, 1903, were fully and completely distinguished from the molded records made and sold by your orator, and except as such molded records were made by defendants by a process which infringed your orator's patents, your orator had no ground, nor did it pretend to have any ground for legitimate complaint against said defendants for making said molded records, since as between your orator's molded records and said molded records made and sold by defendants prior to about the first day of July 1903, there could be no question of unfair competition, nor would the public be likely to be deceived in mistaking one product for the other.

5. Your orator on information and belief, alleges that the molded records made and sold by defendants prior to about the first day of July, 1903, were greatly inferior

[ATTACHMENT]

to your orator's molded records, both in quality and in appearance, and particularly in the respects by reason of which the two types of molded records were distinguished from each other; and although the defendant, Columbia Phonograph Company, attempted to sell its said molded records for the same price as your orator's molded records, namely, fifty cents each, the public preferred your orator's molded records and refused to purchase defendant's said molded records, except in small quantities and in localities where your orator's molded records could not be obtained. Thereupon, finding it impossible to successfully compete with your orator, and seeking to derive some benefit from your orator's business reputation and good will, and to thereby deprive your orator of its free and unrestricted right to market goods of a special peculiarity, with which the public associated your orator's name and reputation, and to thereby work your orator great and irreparable injury, and to deprive your orator of great gains and profits, they, the said defendants jointly conspired to put upon the market molded records which so closely approached the molded records made and sold by your orator, in appearance, as to make it difficult for the average purchaser to distinguish the one from the other. In pursuance of this scheme, the defendant, American Graphophone Company, sometime subsequent to March 1, 1902, began the manufacture of an entirely different variety of molded records than that which it had formerly made, and on or about July, 1, 1903, these new molded records were first sold to the public by the defendant, Columbia Phonograph Company. The new molded records thus made and sold by defendants, embodied and still embody all the general characteristics of appearance that distinguished and distinguish

[ATTACHMENT]

your orator's molded records, having the shiny surface and deep black color, being very hard, and being provided on their interior with concentric ribs. And your orator alleges that the action of defendants in making and selling molded records in close imitation of those made and sold by your orator, has resulted in many instances in the direct loss of sales, by reason of the fact that a large number of persons have purchased defendants' molded records, under the belief that they were your orator's molded records, wherefore, your orator has suffered great and irreparable loss and injury.

6. Your orator, on information and belief, alleges that by reason of the superiority of the new type of molded records which your orator introduced to the public, a good market exists for such records at a list price of fifty cents each, and if the unfair and unlawful acts herein complained of had not been committed by defendants, your orators would be able to sell at this figure the maximum number of molded records which your orator has facilities for manufacturing. Your orator alleges that on or about September 1, 1903, the defendants reduced the list price on their molded records to one-half that received by your orator, wherefore, your orator has been compelled to reduce the list price on its own molded records, and is therefore put to the necessity of receiving a smaller profit on its goods than would be the case if the unfair and fraudulent acts herein complained of had not been committed.

7. Your orator alleges that on or about the 30th of October, 1903, your orator, in order to identify its

[ATTACHMENT]

molded records, adopted as a trade name for the same, the expression "Gold Moulded" and then and thereafter extensively advertised its molded records to the trade and public generally under the said trade name, and your orator has ever since continued to use and is still using said trade name, and has continued to and is still advertising its molded records under the said trade name and is the exclusive owner thereof. And your orator alleges that the expression "Gold Moulded" at the time your orator adopted the same as a trade name to indicate the molded records manufactured and sold exclusively by your orator, had never been used in this country as a trade name for sound records, and your orator alleges that by reason of the adoption of the said expression "Gold Moulded" as a trade name by your orator and by the advertisements of your orator and by the sale of molded records under the said trade name by your orator throughout the United States, the said expression became and is now associated in the mind of the public in this country with the molded sound records manufactured and sold exclusively by your orator, as hereinbefore set forth.

8. Your orator, on information and belief, alleges that notwithstanding your orator's exclusive rights in and to the said trade name, and contriving still further to injure your orator and in violation of principles of fair competition in business, and subsequent to the 31st day of October, 1903, and prior to the filing of this Bill, the defendants fraudulently and with intent to deceive the public, adopted the same name "Gold Moulded" and applied and is now applying the same to the molded records

[ATTACHMENT]

manufactured and sold by them and have used and are still using the said name in advertisements of said records, wherefor your orator, also on information and belief, alleges that a large number of purchasers intending to buy the molded records sold exclusively by your orator, have been and are being, by reason of the practices and misrepresentations of defendants, deceived into buying the molded records sold by the defendant, Columbia Phonograph Company, whereby your orator has been directly injured by loss of sales so incurred.

9. Your orator alleges that by reason of the unfair and fraudulent acts and practices of defendants as hereinbefore set forth, your orator has suffered great and irreparable loss and injury, and by which your orator has been and is still being deprived of great gains and profits, which it might and otherwise would have obtained, but which have been received and enjoyed by the said defendants through their said unlawful acts and doings. And your orator alleges that the said defendants threaten and have threatened to continue the said unfair, unlawful and fraudulent acts and practices, although requested by your orator, to desist from the same.

10. Your orator alleges that the amount of controversy herein exceeds the sum or value of two thousand dollars exclusive of interest and costs.

And your orator therefore prays as follows:

1. That the defendants, American Graphophone Company, and Columbia Phonograph Company may be required by a decree of this Honorable Court to account for and pay over

[ATTACHMENT]

to your orator such gains and profits as have accrued or arisen or been earned or received by said defendants, by reason of said unlawful doings, and of such gains and profits as would have accrued to your orator, but for the unlawful doings of said defendants, and all damages your orator has sustained thereby.

2. That the defendants and their associates, officers, attorneys, servants, clerks, agents and workmen, may be perpetually enjoined and restrained by writ of injunction issuing out of and under the seal of this Honorable Court, from directly or indirectly making or causing to be made, or selling or causing to be sold, any cylindrical, hard, molded, sound records, colored black in imitation of the cylindrical, hard, molded sound records sold and on sale by your orator; or any cylindrical, molded, sound records provided with a series of internal parallel ribs along its bore, in imitation of the cylindrical, molded sound records sold and on sale by your orator; or from applying the expression "Gold Moulded" to any sound record, which may be sold hereafter, or offered or advertised for sale by them.

3. That your Honors grant unto your orator a preliminary injunction issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendants and their associates, officers, attorneys, servants, clerks, agents and workmen to the same purpose, tenor and effect as hereinbefore prayed for with regard to the said perpetual injunction.

4. That said defendants may be decreed to pay the costs of this suit.

5. That your orator may have such other and further relief as the equity of the case may require.

[ATTACHMENT]

6. That the said defendants may, if they can, show why your orators should not have the relief prayed for, and may full true and perfect answer make, but not under oath (answer under oath being expressly waived) according to the best and utmost of their remembrance and belief to the several matters hereinbefore averred and set forth and particularly as if the same were repeated paragraph by paragraph and the said defendants specifically interrogated, may it please your Honors to grant unto your orators a writ of subpoena ad respondendum, issuing out of and under the seal of this Honorable Court, directed to the said defendants, American Graphophone Company and Columbia Phonograph Company, commanding them to appear and make answer to this Bill of Complaint, and to perform and abide by such orders and decrees herein, as to this Court may seem just.

And your orator will ever pray, etc.

Solicitor for Complainant,

Of Counsel.

Legal Box 85

Legal Box 85
Folder 9

United States Circuit Court,

DISTRICT OF CONNECTICUT.

NATIONAL PHONOGRAPH COMPANY,

Complainant,

vs.

AMERICAN GRAPHOPHONE COMPANY and COLUMBIA
PHONOGRAPH COMPANY GENERAL,

Defendants.

IN EQUITY.—No. 1166.

**Bill of Complaint and Complainant's Affidavits
on Motion for Preliminary Injunction.**

RICHARD N. DYER,

Complainant's Solicitor.

RICHARD N. DYER,
FRANK L. DYER,

Of Counsel.

United States Circuit Court, 1

DISTRICT OF CONNECTICUT.

NATIONAL PHOSPHORUM COMPANY,
Complainant,

vs.

AMERICAN GRAPHOPHOSSE COMPANY
and COLLEGE PHOTOGRAPH COM-
PANY GENERAL,
Defendants.

In Equity. 2

On filing the bill of complaint herein and the affidavits of William B. Gilmore, Thomas A. Edison, Richard N. Dyer, Joseph F. McCoy, William Polzor and Dolos Holden, and on hearing argument by counsel for complainant, it is 3

ORDERED that defendants show cause before me at the Court Room of this Court in New Haven, Connecticut, on Thursday, November 2nd, 1904, at 10:30 A. M., why a preliminary injunction should not be granted in accordance with the prayer of the bill of complaint; And it is further ORDERED that in the meantime and until the further order of this Court, defendants, their officers, agents and employees, be restrained and enjoined from selling, shipping and distributing graphophones of the type referred to in complainant's affidavits as "A-Z," and similar to "Complainant's Exhibit No. 1" on file. 4

And it is further ORDERED that the bill and complainant's affidavits be served forthwith upon the defendants and that defendants make service of their replying affidavits upon complainant's counsel on or before October 31st, 1904.

Hartford, Connecticut, October 21st, 1904.

JAMES F. PLATT,
U. S. Judge.

2 Bill of Complaint.

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UNITED STATES CIRCUIT COURT,
DISTRICT OF CONNECTICUT.

NATIONAL PHONOGRAPH COMPANY,
Complainant,

6 vs.

AMERICAN GRAPHOPHONE COMPANY
and COLUMBIA PHONOGRAPH COM-
PANY GENERAL,
Defendants.

In Equity.

7 To the HONORABLE THE JUDGES OF THE CIRCUIT COURT
OF THE UNITED STATES FOR THE DISTRICT OF
CONNECTICUT:

National Phonograph Company, a corporation duly
organized and existing under and by virtue of the laws
of the State of New Jersey, and having its principal
office at West Orange, County of Essex in said State,
brings this Bill of Complaint, against American
Graphophone Company and Columbin Phonograph
Company General, corporations organized and existing
under and by virtue of the laws of the State of West
Virginia, and having jointly a regular and established
8 place of business at Bridgeport, Fairfield County,
State of Connecticut and in said District.

And thereupon your orator complains and says:

1. That heretofore and before the 27th day of Sep-
tember, 1888, Thomas A. Edison of Llewellyn Park,
in the State of New Jersey, and a citizen of
the United States, was the true, original, sole
and first inventor of certain new and use-
ful improvements in phonograph recorder and

Bill of Complaint.

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reproducer, which were not known or used by others
in this country, and not patented or described in any
printed publication in this or any foreign country be-
fore his invention thereof, and which had not been in
public use or on sale in the United States for more
than two years prior to his application for Letters
Patent therefor, and which had not been abandoned to
the public. That on the 27th day of September, 1888,
the said Thomas A. Edison made application in the
form of law to the Commissioner of Patents for the
grant of Letters Patent of the United States for the
said invention, and then and there fully complied in
all respects with the provisions and requirements of
the laws of the United States in such case made and
provided. That the proceedings being had upon said
application, upon the 6th day of February, 1889, Let-
ters Patent of the United States, in the form of law,
were issued and delivered to the said Thomas A. Edi-
son in the name of the United States, under the seal of
the Patent Office, signed and countersigned respect-
ively by the proper officers of the United States, and
numbered 307,280, granting to said Thomas A. Edi-
son, his heirs and assigns, for the term of seventeen
years from the said 6th day of February, 1889, the
full and exclusive right to make, use and vend the said
invention throughout the United States and the terri-
tories thereof, as by reference to said Letters Patent,
or a duly authenticated copy thereof, ready in Court
to be produced, will more fully and at large appear.

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2. That heretofore and before the commission by
the defendants of the acts hereinafter explained, to
wit: on the 16th day of January 1886, the said
Thomas A. Edison, by an instrument in writing duly
signed and delivered, and recorded in the United
States Patent Office on the 7th day of October 1895,
did sell, assign and transfer to John B. Hurdin, Re-
ceiver, his successors or assigns, the entire right, title
and interest in and to the said Letters Patent num-
bered 307,280, granted to said Edison as aforesaid, and

19 the inventions covered thereby, as by reference to said instrument or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear. That heretofore and before the commission by defendants of the acts hereinafter complained of, to wit: on the 5th day of October 1896 the said John B. Harlin, Receiver, by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office on the 7th day of October 1896,

14 14 did sell, assign and transfer to your orator, National Phonograph Company, its successors or assigns, the entire right, title and interest, in and to said Letters Patent numbered 397,280, granted to said Edison as aforesaid, and the inventions covered thereby, as by reference to said instrument, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

3. That heretofore and before the 10th day of April, 1889, Thomas A. Edison of Llewellyn Park, in the State of New Jersey, and a citizen of the United States, was the true, original, sole and first inventor of certain new and useful improvements in phonographs, which were not known or used by others in this country and not patented or described in any printed publication in this or any foreign country before his invention thereof, and which had not been in public use or on sale in the United States for more than two years prior to his application for Letters Patent therefor, and which had not been abandoned to the public. That on the 11th day of April 1889, the said Thomas A. Edison made application in due form of law to the Commissioner of Patents, for the grant of Letters Patent of the United States for the said invention, and then and there fully complied in all respects with the provisions and requirements of the laws of the United States in such cases made and provided. That the proceedings being had upon said application, upon the 17th day of June 1890, Letters Patent of the United States in the form of law were

17 issued and delivered to said Thomas A. Edison in the name of the United States, under the seal of the Patent Office, signed and countersigned respectively by the proper officers of the United States, and numbered 430,378, granting to said Thomas A. Edison, his heirs or assigns, for the term of seventeen years from the said 17th day of June 1890, the full and exclusive right to make, use and vend the said invention throughout the United States and the territories thereof, as by reference to said Letters Patent, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

4. That heretofore and before the commission by defendants of the acts hereinafter complained of, to wit: on the 22nd day of May 1893, the said Thomas A. Edison and the North American Phonograph Company, (a corporation organized under the laws of the State of New Jersey, claiming certain equitable rights in and under said Letters Patent numbered 430,378,) by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office on the 20th day of May 1893, did sell, assign and transfer to the Edison Phonograph Company, a New Jersey corporation, its successors or assigns, the entire right, title and interest in and to said Letters Patent numbered 430,378, granted to the said Edison, as aforesaid, and the inventions covered thereby, as by reference to said instrument, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear. That heretofore and before the commission by defendants of the acts hereinafter complained of, to wit: on the 10th day of January 1889, the said Edison Phonograph Company, by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office, on the 7th day of October 1896, did sell, assign and transfer to John B. Harlin, Receiver, his successors or assigns, the entire right, title and interest in and to said Let-

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ters Patent numbered 430,278, granted to said Edison as aforesaid, and the inventions covered thereby, as by reference to said instrument, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear. That heretofore and before the commission by defendants of the acts hereinafter complained of, to wit: on the 5th day of October, 1896, the said John H. Harlin, Receiver, by an instrument in writing, duly signed and delivered, and recorded in the United States Patent Office, on the 7th day of October, 1896, did sell, assign and transfer to your orator, National Phonograph Company, its successors or assigns, the entire right, title and interest in and to said Letters Patent numbered 430,278, granted to said Edison as aforesaid, and the inventions covered thereby, as by reference to said instrument, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

5. That in the year 1896, extensive litigation was pending in different United States Circuit Courts, in which the defendant, American Graphophone Company was complainant, and your orator's predecessor in title, Edison Phonograph Company and allied interests were defendants, based on certain patents to Bell and Tainter, and other litigations, wherein the said Edison Phonograph Company and others were complainants, and the said American Graphophone Company was defendant, based on certain patents to Edison, including Edison patent numbered 430,278, above referred to, that it was agreed by counsel for the parties in said suits, that as an outcome thereof, if pressed to final hearing, injunctions would be probably granted prohibiting the manufacture and sale of phonographs and graphophones by either party, and thereby practically stopping the entire business. It was therefore agreed by an instrument in writing, dated the 7th day of December, 1896, between the defendant, American Graphophone Company of the one part, and your orator, National Phono-

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graph Company and Edison Phonograph Works, of the other part, to grant mutual licenses under certain of the patents of said parties, including patent numbered 430,278, above referred to, but not including patent numbered 397,280, above referred to, but in the said agreement it was specifically understood between the parties that the license so granted applied only to the manufacture of machines of the type then constructed by the said parties, as by reference to said instrument in writing, or a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear. That one of the typical features of graphophones made and sold by said defendants, American Graphophone Company and Columbia Phonograph Company General, was the carrying bodily of the sound box on a universally pivoted arm, the recording or reproducing stylus being attached directly to the diaphragm. That all graphophones so made and sold by defendants herein for a number of years prior to the date of said license agreement, and up to the commission of the acts herein complained of, have all been characterized by this typical feature of construction and operation. That one of the typical features of phonographs made and sold by your orator, and its predecessors, for more than fifteen years past, and at the present time, has been the mounting of the sound box in a fixed arm, movable parallel to the record surface, and the indirect connection between the reproducing stylus and the diaphragm through the interposition of a floating weight. That in the respects mentioned the phonographs manufactured and sold by your orator, National Phonograph Company have been generally recognized as superior to the graphophones heretofore manufactured and sold by said defendants. That in said respects the said license agreement contemplated a preservation of the characteristic types of machines manufactured at the date of said agreement by your orator and by said defendants respectively, and said license agreement did not contemplate the granting of

any license that would permit defendants under any authority or agreement with your orator to manufacture and sell graphophones wherein the sound box was carried in any other way than on a loosely pivoted arm, and wherein the stylus was connected in any other way than directly with the diaphragm, and specifically said license agreement did not contemplate the granting of any license from your orator to said defendants or either of them, under which the said defendants would be permitted to manufacture and sell graphophones in which the sound box was carried in a fixed arm, with the stylus indirectly connected to the diaphragm through the interposition of a floating weight.

6. That your orator, National Phonograph Company, has ever since the date of the assignment of John H. Harlin, Receiver, last above recited, to wit: October 5th 1895, and is now the owner of said Letters Patent numbered 397,280 and 430,278, and of the rights and privileges respectively secured thereby, except to the extent of the restricted license granted by your orator to the defendant, American Graphophone Company under said Letters Patent, numbered 430,278, as hereinbefore set forth, to manufacture and sell graphophones of the type in vogue on December 7, 1895; and that your orator has been and is, save for the doings of said defendants, and others acting in concert with them, in the exclusive possession of said rights and privileges, and is entitled to the exclusive use, benefit and advantages of the said inventions and improvements, subject to said license agreement.

7. That the said inventions and improvements described in said Letters Patent numbered 397,280 and 430,278, or material or special parts thereof, are so nearly allied in character as to be capable of and adapted for use conjointly in the phonographic art, and they have been so conjointly used in that art by your orator and manufactured and sold by your orator for such use, and have been, and still are so conjointly sold and used by the defendants.

8. That the said inventions and improvements described in said Letters Patent, numbered 397,280 and 430,278 are of great commercial value and public utility; that phonographic apparatus containing the inventions described in said Letters Patent are now and for many years have been manufactured and sold by your orator; that your orator has spent huge sums of money in manufacturing and introducing the same; that the public have generally acquiesced in your orator's right to the same and in the fact that said Letters Patent are good and valid, and that your orator has at all times stood ready and still stands ready, and is able, to supply all public demands for the use of said inventions and improvements of said Letters Patent aforesaid.

9. That the said defendants well knowing the premises and rights secured to your orator as aforesaid, but contriving to injure it and to deprive it of the benefit and advantages which might and otherwise would accrue to it from the said inventions, did, after the grant of said Letters Patent, and before the commencement of this suit, as your orator is informed and believes, at their regular established place of business conducted by them jointly at Bridgeport, Connecticut, within the District of Connecticut aforesaid, and elsewhere in the United States, without license or allowance, and against the will of your orator and in violation of its rights, and in violation of said agreement of December 7, 1895, unlawfully and wrongfully jointly make, or cause to be made, and are now jointly making or causing to be made, and are now jointly selling or causing to be sold, phonograph recording and reproducing apparatus and phonographs of a distinctly different type from graphophones made and sold by defendants on December 7th, 1895, and prior thereto, and employing and containing inventions set forth in Letters Patent aforesaid and specifically covered by claims 1, 2 and 8 of patent numbered 397,280 and by claims 15, 16, 18 and 20 of patent numbered 430,278; and that they still continue

37 jointly so to do and that they threaten to continue the said unlawful acts to a large extent, all in defiance to the rights secured to your orator, as aforesaid, and to its great and irreparable loss and injury, and by which your orator has been, and still is being deprived of great gains and profits, which it might and otherwise would have obtained, but which have been received and enjoyed by said defendants through their said unlawful acts and doings.

88 10. And your orator further shows that as to how many phonographs and phonograph recording and reproducing apparatus have, as aforesaid, been unlawfully made by defendants, and as to the extent of the gains and profits gained and received and enjoyed by them from such unlawful making, your orator is ignorant and prays a discovery thereof.

39 11. That the unlawful manufacture of phonographs and phonograph recording and reproducing apparatus by the employment of inventions set forth in the Letters Patent aforesaid, by the defendants, and their preparation and avowed determination to continue the same in disregard and defiance of the rights of your orator, have the effect to encourage and induce others to venture to infringe said Letters Patent.

40 12. Your orator therefore prays that the said defendants, American Graphophone Company and Columbia Phonograph Company General, jointly and severally, and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every of them, may be perpetually restrained and enjoined by the order and injunction of this Honorable Court, from directly or indirectly infringing, or using, phonographs or phonograph making, selling, or using, apparatus by the employment of the inventions set forth in claims 1, 2 and 3 of said Letters Patent numbered 397,290 and in claim 15, 16, 18 and 20 of said Letters Patent numbered

41 430,278, and differing in type from graphophones of the date of said license agreement, and that they, and each and every of them be ordered to deliver to your orator, or to an officer of this Court, for destruction, all such unlawful phonographs and phonograph recording and reproducing apparatus made by or in possession of said defendants, or either of them, and enjoining the inventions set forth in the particular claims of said Letters Patent as above set forth, without the license of your orator, and that the said defendants may be decreed to pay the costs of this suit, and that your orator may have such other and further relief as to this Honorable Court may seem meet and as shall be agreeable to equity.

43 13. Your orator prays that an injunction *pendente lite* be granted, issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendants and each of them and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every of them, to the same purport, tenor and effect, as heretofore prayed for in regard to said perpetual injunction.

14 14. And, inasmuch as your orator can have no adequate relief, save in this Court, to the end therefore that the said defendants may, if they can show why your orator should not have the relief hereby prayed, and may, but not upon oath, an answer under oath being expressly waived, according to their best and utmost knowledge, remembrance and belief, full, true, direct and perfect answer make to the premises, and to all the several matters heretofore stated and charged, as fully and particularly as if the same were here repeated, and each especially interrogated as to each and every of said matters and may be compelled to account for and pay to your orator the profits by them acquired, and the damages suffered by your orator from the aforesaid unlawful acts, and that the Courts may assess said profits and damages, and may

45 increase the damages to a sum not exceeding three times the amount thereof.
 May it please your Honors to grant unto your orator a writ of subpoena, issuing out of and under the seal of this Honorable Court, directed to the said defendants, American Graphophone Company and Columbia Phonograph Company General, commanding each of them, by a certain day and under a certain penalty, to be and appear in this Honorable Court, then and there to answer to the premises, and to stand to and abide such order and decree as he made against them;
 46 And your orator will every pray.

NATIONAL PHONOGRAPH COMPANY,
 By WILLIAM E. GILMORE,
 President.

RICH D. DYER,
 Solicitor for Complainant,
 RICH D. DYER,
 47 FEAR L. DYER,
 Of Counsel.

STATE OF NEW JERSEY, } ss.:
 County of Essex.

WILLIAM E. GILMORE, being duly sworn, deposes and swears that he is the President of the National Phonograph Company, the complainant named in the foregoing Bill of Complaint, that he has read the said bill and knows the contents thereof, that the same is true to his own knowledge, says as to those matters stated to be alleged on information and belief, and as to those matters he believes it to be true.

Sworn to and subscribed before me this 20th day of October, 1904.

FRANK L. DYER
 Notary Public,
 State of New Jersey,
 Commission Expires February, 1908.

49 AFFIDAVIT OF WILLIAM E. GILMORE, to be used in a suit in equity about to be brought in the United States Circuit Court for the District of Connecticut by the NATIONAL PHONOGRAPH COMPANY AGAINST AMERICAN GRAPHOPHONE COMPANY and COLUMBIA PHONOGRAPH COMPANY GENERAL, ON LETTERS PATENT NUMBERED 397,280 AND 430,278.

STATE OF NEW JERSEY, } ss.:
 County of Essex.

WILLIAM E. GILMORE, having been first duly sworn on oath, doth depose and say as follows:

I am President of the National Phonograph Company. I am informed and believe that the American Graphophone Company and Columbia Phonograph Company General propose to put on the market in a short time, large quantities of "Type A-Z" graphophones, for the coming Christmas trade. Should such machines be sold to the public it would be impossible to follow them. The marketing of graphophones so closely copying Edison graphophones would, in my opinion, result in irreparable injury to the National Phonograph Company. The American Graphophone Company and Columbia Phonograph Company General manufacture and sell graphophones of many styles other than the "Type A-Z," which is an entirely new departure in their machines.

WILLIAM E. GILMORE.

Sworn to and subscribed before me this 20th day of October, 1904.

FRANK L. DYER,
 Notary Public,
 State of New Jersey,
 Commission expires February, 1908.

AFFIDAVIT OF THOMAS A. EDISON FOR USE IN A SUIT ABOUT TO BE BROUGHT IN THE DISTRICT OF COLUMBIA BY NATIONAL PHONOGRAPH COMPANY AGAINST AMERICAN GRAPHOPHONE COMPANY AND COLUMBIA PHONOGRAPH COMPANY, GENERAL.

STATE OF NEW JERSEY,) ss.:
County of Essex.

64 THOMAS A. EDISON having been duly sworn, on oath doth depose and say as follows:

I reside in Llewellyn Park, West Orange, New Jersey. In the year 1896 practically all talking machines on the market were phonographs or graphophones. Phonographs were manufactured under my patents by the Edison Phonograph Works, and were marketed by the National Phonograph Company. Graphophones were manufactured under patents to Bell & Talbot and others, by the American Graphophone Company, and were marketed by the Columbia Phonograph Company. The graphophone as then made, and in fact as they were always made, were, to the best of my knowledge and belief, typified in the respect that the sound edge was hollily movable, the diaphragm being rigidly carried thereby, and the reproducer stylus being directly connected to the diaphragm, so as to rest upon the record surface by the weight of the sound box. Any variations from the two cylindrical shape of the recording surface would be automatically accommodated by the hollily movements of the sound box. This characteristic feature has typified all graphophones put out since that date up to the advent of the so-called "Type A Z" graphophone, which I am informed and believe, the Columbia Company has recently sold in small quantities, but which that company is making in large quantities to put on the market in large numbers. The phonograph in 1896 and for a long time prior thereto, and ever since that date, has been typified in the respect that the sound box is rigidly mounted and car-

ried parallel to the record surface, the reproducer diaphragm is rigidly supported in the sound box, a floating weight is pivoted to the sound box, and the reproducer lever is pivoted to the floating weight and connected to the diaphragm by a link. In the year 1896, suits brought by the phonograph interest were pending against the graphophone interest, to enjoin the alleged infringement of certain of the Edison patents, and other suits brought by the graphophone interest were pending against the phonograph interest, to enjoin the alleged infringement of certain of the graphophone patents. These suits were being pressed vigorously by both interests, and much testimony had been taken, but no case had been decided. It seemed to be the general opinion of the lawyers conducting these suits that some, if not all, of the patents of both interests would be probably sustained, and such a result would have seriously embarrassed, and probably prevented, the later development of the talking machine business. After considerable negotiation therefore, an arrangement was made under which the National Phonograph Company and the Edison Phonograph Works were licensed under each of the graphophone patents as were alleged to be infringed by phonographs as then made, and the American Graphophone Company was licensed under each of the phonograph patents as were alleged to be infringed by graphophones as then made. It was, however, understood between the parties to the agreement that the two types of machines should remain unchanged, that the graphophone interest should not adopt characteristic features of the phonograph, that the phonograph interest should not adopt characteristic features of the graphophones, and that no license was intended to be granted by either party under any patent not specifically set up in the agreement. As I have said, the essential characteristic difference between the graphophone and phonograph, was that with the phonograph the sound box was rigidly supported and a floating weight was used,

61 while with the graphophone, the sound box was itself
 62 wholly movable to accommodate variations in the
 record surface. The agreement in question was ex-
 ecuted December 7, 1896. During the negotiations
 leading up to the agreement, I insisted as an indis-
 pensable point, that the characteristic differences be-
 tween the two types of machines should be preserved.
 When the agreement in its final form was submitted to
 me, I objected to the last sentence of the third para-
 63 graph, as I was afraid the Graphophone Company
 might have constructed, or put out commercially un-
 known to me, a different type of graphophones more
 nearly approaching the phonograph than they were
 then commercially making, or in some other way rely
 on that part of the agreement as a justification for a
 closer copying of the phonograph. I therefore re-
 quested my attorney, Mr. Dyer, to obtain from Mr.
 Mauro, a statement as to whether in fact
 64 there had been any graphophones "put out
 commercially" embodying any features of the
 phonograph which were not embodied in the
 regular graphophones as then made. On December 4,
 1896, Mr. Mauro wrote Mr. Dyer as follows:

"Referring to the questions you asked me today,
 I have ascertained that the Graphophone Co. has
 never put out any graphophones having the feed
 screw on the mandrel shaft, nor any in which the
 65 recorder or reproducer arm was pivoted at one
 64 end and rested at the other on a straight edge, or
 other fixed support, the point being mounted so as
 to move, on encountering irregularities, independ-
 ently of the diaphragm. Among their construc-
 tions (found in an early Tahtor patent Fig. V No.
 375,279) is a reproducer having the point flexibly
 connected with the diaphragm, the casing forming
 a floating weight; but this reproducer rested freely
 on the table, in the manner characteristic of the
 graphophone.

They have put out a small number of machines

66 having both points on one diaphragm, but the con-
 65 struction was not considered so good as that now
 in use. This arrangement, however, was quite
 different from that of the phonograph. One point
 was below the other and so arranged that the
 flexing of the speaking trumpet automatically
 moved the recording point into operative position."

The construction shown in Fig. V of Tahtor patent
 No. 375,279, is one in which the reproducer stylus is 66
 connected to the diaphragm by a thread or fine wire,
 consisting practically a long link, but in that con-
 struction the stylus was not capable of movement in-
 dependent of the diaphragm. The reference by Mr.
 Mauro to "machines having both points on one dia-
 67 phragm" is explained by the fact that at that time
 phonographs at the option of the purchaser were
 equipped either with separate recording and reproduc-
 ing devices, or with a single device having the record-
 ing and reproducing stylus connected to the same dia-
 phragm.

My attention has been called to a graphophone,
 "Type A-2 numbered 387,511," referred to in the affi-
 68 davit of Joseph F. McCoy in this case, as "Complain-
 ant's Exhibit No. 1". I never saw a grapho-
 phone of this type before. It is of a dif-
 ferent type from the graphophones made at
 the date of the agreement above recited. It is of the
 phonographic type and embodies the characteristic fea-
 69 sures of the phonograph. It makes use of a rigidly sup-
 ported sound box carrying a fixed diaphragm, a pivoted
 weight on the sound box, and the stylus lever pivoted
 to the weight and connected to the diaphragm by a
 link. In this respect the machine in question is a
 phonograph and not a graphophone. I have also ex-
 amined a graphophone, referred to in Mr. McCoy's
 affidavit in this case as "Complainant's Exhibit No.
 2". This graphophone is of the type made by the
 American Graphophone Company in the year 1896
 and of the type which that company, to the best of

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my knowledge and belief, has always made since then, up to the appearance of the so-called "Type A-Z" graphophone. I have also examined a phonograph referred to by Mr. McCoy as "Complainant's Exhibit No. 3". This is a modern instrument sold by the National Phonograph Company and is of the same type as phonographs made in 1892, and many years previous thereto. Finally, I have examined a phonograph referred to by Mr. McCoy as "Complainant's Exhibit No. 4", which, to the best of my knowledge and belief, is an instrument made prior to the year 1892.

Sworn to and subscribed before me this 28th day of October, 1904.

THOMAS A. EMBROX.

FRANK L. DYER,
Notary Public,
State of New Jersey,
Commission Expires February, 1908.

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**Legal Department Records
Phonograph - Case Files**

National Phonograph Company v. Lambert Company

This folder contains material pertaining to the suit brought by the National Phonograph Co. against the Lambert Co. in the U.S. Circuit Court for the Northern District of Illinois. The case was initiated in December 1902 and involved Edison's U.S. Patent 713,209 on molding records. The selected items consist of correspondence regarding the progress of litigation; a report by Walter H. Miller on a visit to the Lambert factory in Chicago; and portions of the National Phonograph Co.'s brief on appeal to the U.S. Circuit Court of Appeals. A portion of the court record for this case, the *Edison v. Lambert* interference proceeding, appears in *Thomas A. Edison Papers: A Selective Microfilm Edition, Part III*, 117:270-301.

December 30, 1903.

William E. Gilmore, Esq.,
Pres., National Phon. Co.,
Orange, N.J.

Dear Sir:-

Your favor of the 29th instant has been received enclosing letter from Mr. White and copy of circular issued by the Lambert Company. This circular is the same as those which the Lambert Company have been circulating in this country since the original suit on the tapered bore patent was decided against us. As you will remember, the Circuit Court of Appeals at Chicago held that these early patents of Mr. Edison were perfectly valid, but that they were not infringed by the later product of the Lambert Company. The decision was therefore distinctly favorable to us so far as our own patents were concerned. You also know that we have a suit pending against the Lambert Company for infringement of our process for making duplicate records. Since the Lambert Company contested an interference with us on this patent, there can be, in my opinion, no question of infringement. The Lambert people have taken advantage of every possible technicality to delay a hearing on this suit and have even gone so far as to attempt to mislead the Court. I have every reason to believe that these dilatory tactics are about ended and that the hearing on the case can be had early in the spring. In view of the admitted novelty of Mr. Edison's pro-

W.E.G.2.

cess and of the fact that the Lambert Company actually contested an interference with us involving the same, I do not see how we can fail to prevail in the suit. My instructions to counsel in charge of the case are that it shall be pressed as vigorously as possible in order that an early hearing may be secured.

Yours very truly,

P.

January 14, 1904.

Walter H. Miller, Esq.,
Orange, N. J.

Dear Sir:-

I am writing you this letter for the purpose of confirming the instructions which I gave you verbally. The purpose of your visit to Chicago is to attend the making of certain experiments by an expert produced by the Lambert Company for the purpose of demonstrating the differences between the Edison Expansion Process and the Lambert Process. When you reach Chicago you should arrange, if possible, to have Mr. Henry C. Hecht, Jr. of the Chicago office accompany you as a witness. If Mr. Hecht is no longer employed by the Chicago office, you should get some other mechanic or sufficiently intelligent person to go with you. The local Attorney in charge of the case is Mr. P. C. Dyrenforth of the firm of Dyrenforth, Dyrenforth & Lee, Monadnock Bldg., Chicago, to whom I give you a letter of introduction herewith.

The Edison patent on which the suit is brought covers the expanding process on which Mr. Wurth worked so long. With that process the mold was made as now, a blank was then inserted in the mold, the two were heated so as to engage the blank with the mold, a taper plunger was then driven in to expand the blank and take an impression, the plunger was then withdrawn, and the resulting duplicate was allowed to cool so as to contract diametrically, so as to be withdrawn longitudinally. The Edison patent

W.H.M. 2, 12/14/04.

however, says that the entire expansion cannot be effected either by heating or mechanical pressure, but the two forces are preferably used together. The Edison patent refers to various materials for use including celluloid. The essential feature of the Edison patent is the diametric shrinkage of the record after the impression has been taken so as to clear the engaging surfaces and permit the record to be withdrawn. Before Edison's invention, duplicate records had been suggested, but they were made either in split molds, which were open after the impression had been taken, or else in threaded molds from which the duplicates were unscrewed, or else the duplicates were so thin that they could be collapsed after the impression had been received. Our theory of the Edison patent is that it covers any process in which a continuous mold is used and from which the duplicates are removed, by first shrinking them diametrically. This is the point that you should always keep upper-most in your mind.

With the Lambert process the molds are made substantially as we make them, except that instead of a vacuous deposit of gold, the record is first coated with graphite. The celluloid blanks are formed with inturned end flanges and are inserted in the mold, after which a cap plate is placed over the top of mold so as to seal the interior. Steam is now let into the blank at a pressure of 40 lbs. per inch, so as to soften the blank and expand it outwardly. Compressed air at a pressure of 100 lbs. per inch is now introduced into the blank and completes the expansion. The top plate is then removed and the record is allowed to shrink diametrically until the engaging surfaces are clear, after which the

W.R.M. 3, 12/14/04.

record falls out by its weight. You will see that the steam treatment is analogous to our preliminary heating, and that the expansion by compressed air is analogous to our expansion by a taper plunger. The Lambert people pretend to claim that with their process the records are not contracted diametrically but are, in fact, collapsed. This is a false claim, but this feature is one that you should pay very close attention to. It is an impossibility to collapse a Lambert record for any useful purpose, but in every instance there must be a sufficient cooling to result in diametric shrinking.

I hand you a copy of some of the testimony already taken in the Lambert case which you can read at your leisure, but I refer you particularly to the depositions of Philpot, Rustad, Bloom and Lambert, as well as the two affidavits of myself and the affidavit of Hecht. Mr. Dyrenforth has copies of the several patents involved which it may be desirable for you to read. Please make careful notes of all that you see, so that we may be able to call upon you for a deposition if necessary.

Yours very truly,

M.

Lambert

Mr. Dyer:-

Attached you will find a report of what I saw on my recent trip to the Lambert factory, covering everything I saw. It seems to me a very strong point should be made regarding the use of the so called air pressure. This, I am positive, is not necessary as a hardener for the celluloid blank, but the benefit derived from same is the pressure it exerts in pushing the blank solidly against the mould. I explained before that it is impossible to use steam at this high pressure as it would be too warm and would disintegrate the celluloid. Kindly advise me if you wish me to make any experiments for you making celluloid records by the press process. You said something about it but I do not remember what your decision was.

W. H. Miller.

1/23/04.

[ENCLOSURE]

I arrived in Chicago on the evening of Sunday, January 17th, and reported at the office of Dyrenforth & Lee, and found that Mr. F. C. Dyrenforth was in New York, and his brother found it was impossible for him to go to the Lambert factory, and sent as his representative, Mr. Davies, who he stated occupied the position of law clerk in his office and was thoroughly capable.

I then went to the Lambert factory accompanied by Mr. Davies and Mr. Hect, and then when we arrived there we met a Mr. Tyler who said that Mr. Philpot and Mr. Carter would arrive there in a very short time. I found after making inquiries, that Mr. Carter is the mechanical expert for the Lambert Co.

The experiments started about 12.30 P. M., and Mr. Carter demonstrated to me the process of making the celluloid record which is now sold by them. This was done by taking a celluloid tube, the edges of which were turned over at each end, the length of our regular Phonograph cylinder, and I believe are purchased by them in this form from the celluloid manufacturers. This tube was placed in a mould and put in a specially constructed machine which is so arranged that after the tube is enclosed a cap is put on the top to prevent the steam escaping. The steam is then turned on, and as I understood Mr. Philpot to say, was about 40 pounds to the square inch, this steam had a tendency to soften the celluloid somewhat and expand it at the same time. This pressure was kept on for about one half minute, after which it was turned off, and a cold air pressure forced in at about 100 pounds to the square inch, so their foreman, Mr. Tyler, informs me, although I had no means of proving this statement. At the same time there is a slight vent in the pipe below to allow a constant escape of air, which I presume was to carry away any condense left there by the steam. I held my finger at this vent at different times during the period the cold air was on and found that it was quite warm to the touch, so that the air can not be called cold. After this cold air pressure was left on for a period of about one minute and a half it was turned off, the cap removed from the top of the mould, and by the time this was removed and transferred to a bench opposite the record had shrunk sufficiently to drop out of the mould. There was no effort required to remove it, and no attempt was made to collapse same.

Mr. Carter then attempted to make an experiment which was to demonstrate that it was impossible to make a duplicate of celluloid from the Press Process of Edison's. He had 4 or 5 celluloid blanks of about one eighth of an inch thickness, one of these was inserted into a mould, and inside the celluloid blank was placed a tapered mandrel. The mould, with the blank and tapered mandrel, was placed in an oven and heated to about 210 degrees. It was then taken out and the mandrel was hit several hard blows in order to force the mandrel further into the cylinder and exert a pressure of the celluloid blank against the mould. It was left in this condition for a minute or so and then the mandrel was forced out. The mould and blank was then placed in a bucket of cold water, and after a period of a minute or so, the blank was removed, which we were able to do on account of the contraction of the celluloid, and placed on a machine. I found that certain portions of this record was quite as good as the sample made by the regular Lambert process as described herein.

[ENCLOSURE]

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I found that the main reason that this record was not perfect was caused by the irregularity of the surface of the celluloid blank which was placed in the mould, as I held a straight edge against the surface, and found that it had a variation in some places of more than one sixty-fourth of an inch. I then suggested to them that in order to make it more perfect it would be necessary to turn the outside of perfectly round, and at the same taper as the mould, and they attempted to do this, but found it was impossible with the apparatus they had.

They then wished to try the experiment again with another blank and the best one they had was picked out for the purpose, and I found by examining it after it was placed in the mould that one end of it was at least sixteen diameter smaller than at the other, and that the surface was much more uneven than the first celluloid blank experimented with. The operation was carried through as before, and the result was much more imperfect than the first one. These records were placed in a box and I suppose they will be shown by Mr. Carter in evidence.

They then attempted to demonstrate to me that the apparatus used by them to make celluloid records with could not possibly be used to make duplicates of wax records with, and to prove same an Edison blank was placed inside of their mould, put on their special machine and capped over as I explained in the case of their celluloid record, and the steam was turned on, but I advised them to turn it on very moderately as the apparatus was not suitable for a wax record, the wax record having no flange on to expand and prevent the steam from escaping. After this was left on for about one minute, the record was removed without applying any cold air, as I thought it would not be necessary in this case, and I found that like the record was not printed all over its surface, it had indications of record variations on it. I explained to them that this was no apparatus to try this experiment with, on account of the leakage of steam and the steam coming in direct contact with the wax would dissolve it.

I explained that the proper way to apply these principles would be to have a rubber bag inside of the blank, and capped over in the same manner as they do, which would have the effect of heating the blank, and at the same time prevent the steam coming into direct contact with the wax. In this way if the steam pressure was strong enough it would be unnecessary to use the air pressure. You understand, I suppose, that in the regular Lambert process they could readily make a satisfactory celluloid duplicate by increasing the steam pressure greater than 40 pounds to the square inch and do away with the air pressure if it were not for the fact that as the steam pressure increases the heat also increases, and this would be at such a high temperature that it would ~~destroy~~ the celluloid. As I explained to you in a verbal conversation after we had made the first record with the thick celluloid blank it came out much better than Mr. Philpot expected, and while Mr. Carter and his man were outside to see if they could turn a celluloid blank more satisfactorily, Mr. Philpot say he didn't see why the devil they were trying this experiment, as he did not see they were showing anything, and the process was not commercial. He also expressed himself as though we were trying to keep them in hot water with law suits, and he said he could stand it if we could, and had laid a large sum of money away for this

[ENCLOSURE]

-3-

Revised

particular purpose, and that the limited trains were just as comfortable for him to ride in as for ourselves. He also said that as soon as this case is decided he was immediately going to sue us on our moulded ~~records~~. He claims he moulded records some six or seven years ago, as he said they used to put blanks in their mould and allow them to heat and get an impression of same on the wax blank in order to test it. This he says he done in the early days of the business. He also advised me that he had several suits against Petit, and that he originally laid aside \$25000 for this purpose, and he finds his legal talent up to date has cost him about \$8000.00 with little or no satisfaction, but expects to put him out of business in the near future.

Lambert suit.

January 26, 1904.

Philip C. Dyrenforth, Esq.,
Monadnock Bldg.,
Chicago, Ill.

Dear Mr. Dyrenforth:-

My brother cannot come to Chicago and I have therefore decided to go there myself and will see you early Monday morning, February 1st. I can spend the entire week with you assisting in the cross-examination of Philpot and Carter. On February 8th I have to argue before the Circuit Court of Appeals at New Orleans and will therefore have to leave Chicago not later than Saturday. I shall probably reach Chicago Sunday afternoon on the Chicago Limited of the Pennsylvania Railroad, unless I telegraph you to the contrary, and I wish therefore that you would have some one from your office meet me at that time with a copy of Carter's deposition, so that I can look it over Sunday evening.

With regard to Philpot's deposition, his position is utterly contradictory of the position taken by him at the time the preliminary injunction was dissolved. For instance, in his present deposition he states that the company is not working under the Lambert process, but is working under the Messer process, and in his affidavit of June 18, 1903, (see our record on injunction motion, page 87) he said that they were operating under the Lambert

P.C.D.2.

process. He now says (Q's 26 & 27) that the records shrink so as to fall out of the mould by its own weight, but in his previous deposition (XQ54, p.101 and XQ59 p.102) he said that the record required to be collapsed so as to be withdrawn. It was because of this latter allegation you will remember, that Judge Kolhsaat dissolved the injunction originally, so that Philpot tacitly admits that the Judge was misled. The Philpot deposition in its entirety is unreliable and equivocal and I think can be pretty effectively disposed of on a vigorous cross-examination. I suggest these points to you in order that you may start in with the cross-examination of Philpot if Sheridan evinces any disposition to take any advantage of the short delay which will be incurred by my not appearing before Monday.

Yours very truly,

ELD/HGW

January 29, 1904

Walter H. Miller, Esq.,
Orange, New Jersey.

Dear Sir:-

Your memorandum of the 23rd. inst. has been received enclosing report on your visit to the Lambert factory, and for which I thank you.

It would appear that the tests made by Mr. Carter are favorable to our contention. Of course, the reason why he was unable to get better results with the Edison apparatus with tapered plunger is due to the fact that the blank was very imperfect; but nevertheless the Lambert people will try to argue that the Edison apparatus is not susceptible of use in the manufacture of celluloid records.

I think, therefore, it would be well for you to get hold of a reasonably perfect celluloid tube, and show what can be done with that apparatus. If possible, I should like to have this done right away, because I expect to leave for Chicago to cross-examine Mr. Carter next Friday.

Yours very truly,

ELD/AM.


WASHINGTON OFFICE,
622 F STREET NW
CABLE ADDRESS,
"BYRNFORTH" CHICAGO.
LONG DISTANCE TELEPHONE,
HARRISON 42
AUTOMATIC 3863.

Law Offices of
Dyrenforth, Dyrenforth & Lee
Patent, Trade Mark, Copyright Causes.
Patent Soliciting Corporation Law.
Suite 1352, Monradcock Building,

P. C. DYRENFORTH,
W. H. DYRENFORTH,
J. W. DYRENFORTH,
DOUGLAS DYRENFORTH,
JOHN H. LEE.

DICTATED BY P.C.D. (W)

Chicago Feb. 19, 1904.



Frank L. Dyer, Esq.,
Edison Laboratory,
Patent Department,
Orange, N. J.

Dear Mr. Dyer;

I finished the cross-examination of Mr. Carter yesterday afternoon, and the re-direct was concluded this morning. I inclose a copy herewith. In my opinion the assertion that the defendant company is following the process of the Young British patent is completely refuted, and I think that you will agree with me. The Young patent definitely prescribes that the celluloid blank is to be of the same size as the master record, and the cross-examination shows that in practicing the method of the defendant, when a blank too closely approximates this size, it is rejected and a smaller one used in place of it. In the light of Mr. Carter's last experiment I am more than ever convinced that where the Young process is accurately followed the record cannot be removed from the matrix without collapsing, in the proper sense of that term. No such experiment has been made by Mr. Carter, and I believe that if you have the facilities for making it our contention will be demonstrated. Of course Mr. Carter's last experiment proved nothing, because there was a clearance between the blank and the cold matrix and the only effect of preliminarily heating the matrix as he describes, could be to prolong the operations with the steam and cold air, as he states. If Mr. Carter ever made the really material test (that of employing a very thin blank of the same diameter as the master record, introducing it into a matrix expanded by heat and then softening, expanding and cooling the record cylinder) he was careful to say nothing about it; which leads me to suspect that he may have made such an experiment and that it failed.

Please read over the cross-examination and let me know whether you think it advisable to question Mr. Carter on any other subjects. If you do I can no doubt arrange to have him recalled for further cross-examination.

You will observe that Mr. Carter has testified that the

Frank L. Dyer, Esq. No. 2.
F.O.D. (W) Feb. 19, 1904.

height of the threads on the Lioret cylinder would probably be about 1/64th of an inch in practice; and I believe that with threads of this depth the record could not be got out without unscrewing, as expressed in the Lioret United States patent. Mr. Carter admits that the "electro-plastic mold" could not be removed from the steel master record without unscrewing, as stated in the United States patent, although there is no mention of unscrewing in the British patent. This at least affords ground for argument that the United States specification is only more explicit than the English one, not only in this behalf but also in the matter of the removal of the record. If this fact can also be demonstrated it will of course be so much the better.

Mr. Carter spent a considerable time over Webster's Dictionary in an attempt to support his use of the word "collapse", but finally gave the matter up and answered as he did.

The general purpose of my cross-examination was to show, as much by the questions as by the answers, the speciousness and unfairness of his testimony given on the direct, and to my mind this is sufficiently shown. His contention that the defendant in practicing its present method is absolutely following the directions of the Young specification is manifestly unwarranted and absurd. However, as to all this you will be able to judge for yourself.

I am unable to get Mr. Philpot for cross-examination today, but I may be able to get him for a short time tomorrow forenoon. If not, I cannot begin with him until Tuesday morning, since Monday will be a public holiday. Mr. Sheridan has definitely refused to stipulate into this record any testimony from the American Graphophone Company record. I made the offer, if he would stipulate in the testimony, to recall the witnesses for further cross-examination, but he said that he wished to have them examined originally in this case if at all.

I suppose I am right in sending the inclosed copy of the cross-examination to you instead of to Mr. Richard N. Dyer.

Very truly yours,

F. L. Dyer

Lambert suits.

February 23/04.

F.C. Dyrenforth, Esq.,
Monadnock Bldg.,
Chicago, Ill.

Dear Mr. Dyrenforth:-

Your favor of the 19th instant has been received enclosing copy of Mr. Carter's cross-examination. I have read it over with interest and do not see how it can be improved. The speciousness of his argument and his general unfairness are evident on the face. As I said to you in Chicago, it seems to me that the Young patent at least, is forever and completely disposed of by the statement made by Lambert in his original application that the Young patent is entirely inoperative and that he had frequently tried without success to carry that process out. I am having experiments made here under my direction with both Young and Loiret so as to be able to make a satisfactory reply to Carter's arguments.

I note that Mr. Sheridan has definitely refused to stipulate into this record any testimony taken in the graphophone case. Perhaps it is just as well that this should be so, because I now find that Mr. Edison was mistaken in saying that he made no celluloid records before 1900. As a matter of fact, such records were made as early as 1889 and strange to say, in

P.C.D.2.

very thin material as suggested by Young. I look forward
with interest to the result of Philpot's cross-examination.

Yours very truly,

ELD/HGW

AUG. 19, 1904.

National Phonograph Co. vs. Lambert Co:

F. C. Dyrenforth, Esq.,
Monadnock Building,
Chicago, Ill.

My dear Sir:--

I am in receipt of a copy of your letter of the 17th inst. to Messrs. Dyer & Dyer, together with a copy of Judge Kohlsaat's opinion in the above case. My brother is away on his vacation, so that I have not had an opportunity of discussing the case with him.

Naturally, the decision is a surprise and disappointment to me as it was to you. Judge Kohlsaat has in some way obtained an entirely wrong idea of the case. He assumes that the process was perfected in 1888, when as a matter of fact the interference record shows that the process was not commercially developed until shortly before the application was filed. This was settled in the Patent Office during the prosecution of the interference. He also assumes that "a great many copies of records made from matrices were placed upon the market" - presumably two years before the application was filed. The fact is that molded records were not used as masters for mechanical duplicating until 1897. He then appears to assume that Edison abandoned the process and took up mechanical

P.C.Dyrenforth, Esq.... 2

duplicating and that after doing so, the Lambert Company appeared on the field and developed their business. Apparently then, Edison did not resume the patented process until July 1, 1902. As a matter of fact, on July 1, 1902 the specific process of the patent was abandoned, as I make perfectly clear in my testimony, which Judge Kohlsaat has confused with Edison's, but it had been used continuously up to that time and the subject matter of the second and third claims is still used.

The entire opinion is so absolutely mistaken that it is very difficult to tell just what theory the Judge had in mind. It occurs to me that possibly in view of the obvious errors, a motion for rehearing would be in order, and I wish you would give me your view on this point. At any rate, we will certainly wish to take an appeal.

Yours very truly,

ELD/MLK.

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F. C. DYRENFORTH,
W. H. DYRENFORTH,
J. W. DYRENFORTH,
DOUGLAS DYRENFORTH,
JOHN H. LEE.

DICTATED BY
P. C. D. (H)

Chicago August 24, 1904

Messrs. Dyer & Dyer,
Attorneys at Law,
31 Nassau St., New York, N. Y.

Gentlemen:

This afternoon I received your telegram referring to the papers for a rehearing, and a few days ago I received a letter from Mr. Frank L. Dyer, dated August 19th, in the course of which he asked my views concerning a rehearing. I have been considering the subject and up to the present time I have not fully made up my mind as to whether it will be better to apply for a rehearing or proceed at once to the appeal, though all along I have felt inclined to the latter course. I doubt very much that a rehearing would change the result in the lower court. Moreover, it would entail a considerable delay and might result in a decision against us on more rational and logical grounds than those given in the opinion which has been rendered. The errors in that opinion are so flagrant that they cannot fail to help us in the Circuit Court of Appeals. On the other hand, I think that Judge Kohlsaat had very little to do with the decision of the case in his court. He was ill for several weeks and I have reason to believe that the opinion was actually written by Mr. Whitney, his former secretary, and that Judge Kohlsaat merely accepted it without extended investigation of the record, if indeed he made any investigation at all. Therefore, if in an argument or rehearing the errors should be clearly and pointedly impressed upon Judge Kohlsaat he might come to an opposite conclusion. These opposing considerations have been in my mind since I received Mr. Frank L. Dyer's letter. However, as I have already said, I incline to the belief that the best course will be to proceed forthwith to an appeal.

Very truly yours

F. Dyrenforth

P. S. August 25, 1904

The foregoing letter was dictated last evening, but not transcribed until this morning. I have just received Mr. Frank L. Dyer's letter of August 23rd, which makes the matter of the telegram clear. Under the circumstances I can understand the policy of an application for rehearing.

P. C. D.



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Folder 15

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IN THE
United States Circuit Court of Appeals

FOR THE SEVENTH CIRCUIT
OCTOBER TERM, A. D. 1964

No. 1184.

NATIONAL PHONOGRAPH COMPANY,
Appellant.

vs.
LAMBERT COMPANY,
Appellee.

1. Reply to Appellee's Arguments.
2. On the Opinions of the Court Below.
3. Authorities on Issues Raised by Appellee.

RICHARD N. DYER,
PHILIP C. DYRENFORTH,
Counsel for Appellant.

IN THE
United States Circuit Court of Appeals
FOR THE SEVENTH CIRCUIT.

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REPLY TO APPELLEE'S ARGUMENTS.

In the brief time allowed for a reply to appellee's arguments, it is not practicable to do more than refer to the salient points, particularly such as are not fully covered by the appellant's main brief, including some matters not emphasized at the argument which appear in appellee's brief.

ABANDONMENT UNDER THE STATUTE BY TWO YEARS' PUBLIC USE PRIOR TO THE FILING OF EDISON'S APPLICATION.

At the argument the point was made by appellee's counsel that the present case comes within the rule announced

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by the Supreme Court in *Smith and Griggs Mfg. Co. v. Sprague*, namely, that where it is clearly shown that there was a public use of an invention by the inventor for more than two years prior to the application, the burden rests on him to establish by convincing proof that the use was for the purpose of perfecting an incomplete invention by tests and experiments.

We assert that the present case does not come within that rule, because it lacks the element of a clear showing of public use more than two years prior to the application, which is the essential condition of the rule. The only use made of the invention prior to 1897, when Edison began to practice the process commercially, was the use made by Edison and his assisting experimentalists in Edison's laboratory for the purpose of perfecting the process.

The argument was also made, based upon *Eastman v. Mayor* (134 Fed., 844), that the nine years occupied by Edison in his experimental work was one of unreasonable length—indicating that the excuse that that period was devoted to experimental work is not a *bona fide* one. If not for the purpose of experiment what use was made of the time? Edison made no profit out of the work during this interval. He spent twenty-nine thousand dollars and employed at least one man continuously on the work. Do continuous work and continuous expenditure of this character indicate an *intention* to abandon the invention? When the complicated character of the process is considered and the delicacy of the various operations understood, the time required to perfect the process does not appear unreasonable. It is probably true that Edison might, by expending one hundred thousand dollars on the work and the employment of a number of men, have perfected the invention within a shorter time. But as he himself says, there was at the time little or no demand from the public for the phonograph and

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its adjuncts. He had faith that demand would eventually arise—and he expected by the course he was pursuing to have the process perfected in time to meet that demand. The result shows that his judgment was sound. Surely, under these circumstances, an inventor is not required to do more than keep one man continuously employed upon perfecting an invention, or spend more than three thousand dollars a year for that purpose. And it should be remembered that, even though Edison took nine years to perfect the invention, he reached the goal before anybody else, and consequently no question of intervening rights arises.

VALIDITY OF EDISON'S PATENT.

It is asserted that Edison's patent is invalid in view of the patents of Lloret and Young. These patents are fully treated in the complainant's main brief (p. 48, *et seq.*). That they describe inoperative and useless suggestions is not only proved in this case, but was also asserted by the appellee's predecessor during the prosecution of the Lambert application, which was in interference with Edison. Further than this, both Edison and Lambert, while in the Patent Office, amended their claims so as to distinguish in terms over the Lloret and Young disclosures, and one of these claims was made the subject of the interference between Edison and Lambert, which was decided in Edison's favor. While the defense of invalidity based upon these patents is open to the appellee here, it comes with poor grace from the appellee to assert that the invention, which it convinced the Patent Office was patentable, and upon which it contested an interference, is in fact not patentable because of the same prior matters which were referred to by the Patent Office. Judge Platt, in the opinion which is printed at the end of appellee's brief, finds with regard to the Lloret and Young patents that they involved, respect-

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ively, the features of "unscrewing" and "collapsing" which both Edison and Lambert asserted in the Patent Office they involved, and which features were made the basis for the distinctions over those patents. The fact that the Lioret United States patent contains a claim couched in general terms would seem to be an immaterial consideration.

INFRINGEMENT.

Appellee's argument upon the question of infringement is of a two-fold character. Appellee asserts that it does not employ a blank "sufficiently thick," etc., which is specified in some, but not all, of the claims in issue, and that the process which it employs is in general a substantially different process from that described and claimed in the Edison patent.

Regarding the first element of this argument, it is explained in our main brief (p. 73) that the expression "sufficiently thick," etc., was intended to distinguish a self-sustaining blank thick enough to receive a surface impression from the film-like blank suggested by Young, which is so thin that the impressions received from the mold appear on the back of the film-like sheet, and which is also so thin that the blank is not self-sustaining or capable of preserving its form either before or after the mold impression is taken. This distinction was made by Lambert in the prosecution of his application and was accepted by the Patent Office. The difference between a celluloid blank having a thickness of eighty-thousandths of an inch, formerly used by the appellee (and admitted by appellee's counsel at the hearing to be "sufficiently thick," etc.) and a celluloid blank having a thickness of fifty-thousandths of an inch now used by the appellee, does not change the character of the blank with respect to this feature. (Brief, p. 87.) The blank is still self-sustaining and has a thickness at

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least fifty times the depth of the deepest mold impressions, as indicated by the illustrative drawing on page 331 of the record.

Regarding the argument that the appellee's process is in a general way different from the process of the Edison patent, it is to be observed that appellee's process is step by step a counterpart of the Edison process. The appellee produces a mold in the same way, inserts in the mold a blank of the same character, softens the blank by the application of heat, expands the softened blank against the mold by internal pressure, and contracts the impressed blank away from the surface of the mold by a reduction in temperature sufficient to entirely clear the surfaces and permit the longitudinal withdrawal of the duplicate from the mold. These are the steps of the process described in the Edison patent in suit. The material, celluloid, used by the appellee is one of the materials specifically referred to in the Edison patent, as useful for the purpose. The use by the appellee of an air-pressure to expand the blank instead of a tapering mandrel is an immaterial difference. The tapering mandrel could undoubtedly be used with celluloid blanks, although it is probably true that the air-pressure is more convenient. Edison's patent is, however, for the process and the instrumentalities employed in carrying it out are of secondary importance. The advance made by Messer, which is lauded by appellee's counsel, was exceedingly slight, as shown in our main brief. The most that can be said is that the appellee has developed the details of a process well adapted for the making of celluloid duplicates; but it did this, admittedly, after the decision against Lambert in the interference case and with full knowledge that it was developing a process which Edison had previously developed with somewhat different details and upon which Edison was endeavoring to secure a patent.

The argument advanced by appellee's counsel and emphasized at the hearing, namely, that in view of the distinctions sought to be drawn over the Lloret and Young patents during the prosecution of the Edison application, by the affidavit of Wurth and the accompanying arguments of Edison's solicitor, the claims of the Edison patent should be limited, beyond what is required by their terms, to details not employed by the appellee, is not warranted by the facts. As pointed out in our main brief (p. 83) this argument was not accepted by the Patent Office, and the distinctions over Lloret and Young which were accepted by the Patent Office were those which appear in terms in Edison's claims. Under these circumstances the authorities (Brief, p. 84) are clear that distinctions advanced argumentatively, not accepted by the Patent Office and not embodied in the patent by changes in the claims, are not carried forward into the grant and cannot be used to limit the scope of the patent.

DOUBLE PATENTING.

The proposition of double patenting which appears in appellee's brief was not emphasized at the argument and is not referred to in appellant's brief. It is based upon the earlier grant of Edison's patent No. 667,662, which covers the casting process and which was issued upon an application filed two years later than the application for the patent in suit. Referring to the claims which are printed on page 47 of appellee's brief, it will be seen that the claim of this casting patent there referred to for purpose of comparison includes the element of "introducing a molten material into the mold." The two patents are based upon different inventive disclosures. While it may be true that claims 2 and 3 of the patent in suit (although Judge Platt thought otherwise) cover an invention broad enough to include the cast-

ing process, yet it is evident that the claims of the casting patent are limited to the specific disclosure of that patent and could not be based upon the specific disclosure of the patent in suit. The patent in suit, covering the broad invention and based upon the earlier application, was held up in the Patent Office by interferences, so that the later specific or improvement application became a patent of earlier date; but under these circumstances the authorities are clear that the patents are to be regarded in the order of their applications and that the patent of earlier date based upon the later application cannot be used to limit the scope of the patent of later date based upon the earlier application.

Thomson-Houston Co. v. Elmira Co., 71 Fed., 396.

Thomson-Houston Co. v. Ohio Brass Co., 80 Fed., 712.

Westinghouse Co. v. Dayton Co., 106 Fed., 724.

JUDGE PLATT'S OPINION.

The case before Judge Platt was based upon two patents, the patent in suit and Edison's casting patent No. 667,662. The question of infringement was different there from what it is here. The defendant there used the casting process. Consequently only claims 2 and 3 of the patent in suit were involved in that case. Judge Platt disposed of the contentions regarding claims 2 and 3 of the patent in suit by finding that these claims were not infringed by a casting process. (Defendant's Brief, top p. 165). It is not at all certain that if the defendant's process before Judge Platt had been an expanding process, as it is here, he would not have found infringement of claims 2 and 3 in favor of the complainant. His conclusions as to the Lloret and Young patents (Defendant's Brief, p. 163) are favorable to the appellant in this case. The record before Judge Platt was also

quite different from the record in the present case. It is needless to add that Judge Platt's opinion is subject to review by the Circuit Court of Appeals for the Second Circuit and hence cannot be regarded as the final word even in that case—much less in the present case.

CONCLUSION.

The position of Edison as a pioneer in this art is admitted. The possibility of duplicating phonograph records was referred to by Mr. Edison as early as 1878 (Rec., p. 297). For years, however, this possibility existed only as a mere speculation. The difficulties, to the ordinary mind, would appear insurmountable. The problem to be solved was the exact copying of several millions heterogeneous, closely associated and excessively minute indentations, each having its characteristic form. This copying must not be merely approximate, but must be so exact that to the ear the fine variations in pitch and tone, and the delicate shading as to quality, must be faithfully reproduced. Not only this, but a successful realization of Edison's early aspirations involved not the duplication of a phonograph record as a mere scientific possibility, but as a commercial proposition, at a sufficiently low cost and in such a manner that the work could be done in an ordinary factory by ordinary workmen. Although in his early patents of 1878 (Rec., pp. 297-298) Edison suggested a number of possible ways by which phonographic duplication could be effected, it was not until his caveat of 1888 that he had a definite conception of a successful process by which the long sought for solution was presented. Even then the bare suggestion only was made, and the succeeding years of experimenting were necessary to bring the process to the desired degree of refinement to make it not only commercial, but to secure the desired accuracy of duplication. As the records show, these experi-

ments were continuous and involved a yearly expense of more than \$3,000, amounting in the aggregate to somewhat more than \$29,000. By 1897 the process was perfected and duplicates made thereby were, for the first time, used commercially.

Simple as the process may now appear to be, its completion represented the realization of twenty years of thought and hope and nine years of continuous and expensive experiment. One of the most difficult things in the world is, after the accomplishment of a result, to put oneself in the mental attitude of the inventor before the accomplishment of that result. In the present case, however, there is, we submit, ample evidence in support of our contention that the duplication of a phonograph record, far from being an obvious thing, was in fact an almost hopeless problem. For instance, in Edison's patent No. 382,419, dated May 8, 1888 (Rec. p. 744), a process is described in which the attempt was made to duplicate a phonograph record by a knurling operation; but it is admitted that such a process is practically inoperative and certainly uncommercial. In Edison's patent No. 784,582, of October 18, 1892 (Rec. p. 766), his application for which was filed prior to the caveat, a process is described for duplicating phonograph records by casting in a split mold; but it is also admitted that such a process is commercially inoperative. Even after Edison's caveat was filed and after his long period of experimentation had commenced, Lioret obtained his American and British patents, which also describe inoperative and uncommercial processes and which have never passed beyond the patents themselves. Finally, the British patent to Young, granted in 1894, more than five years after the filing of the caveat, likewise describes a practically inoperative and uncommercial process. If, as contended by the appellee, the process suggested by Edison in the patent in suit was an

obvious process disclosing no patentable novelty, why was it that Edison himself early in 1888 was suggesting inoperative lancing and casting methods, and Lioret and Young in 1893 and 1894 were suggesting equally inoperative and uncommercial operations? The only answer must be that for some reason—either the inherent difficulties in the problem, or an incorrect understanding of the situation, or a misconception of the various phenomena involved—the solution of the difficulty was utterly beyond the ordinary skill of the workman in this art.

At the hearing it was urged by the appellee that the successful process involved nothing more than the introduction of a blank in the mold disclosed in Edison's patent No. 484,582 (Rec. p. 766), and its subsequent expansion, the removal of the duplicate following as a natural consequence. This is not a correct statement of the invention of the patent in suit, which necessitates a much finer analysis. To carry the invention into effect the process involves the following essentials:

1. An electro-plated mold:

(a) With cylindrical continuous walls, so that the resulting duplicate shall not be formed with fins or burrs, as would be the case with the split mold as disclosed in Edison's patent No. 484,582.

(b) With a record in relief on its inner wall of such a shallow character relative to its width (the width being approximately ten times the depth) as to permit the detachment of the duplicate by diametric contraction without injury to the delicate record surface by reason of longitudinal contraction.

2. The introduction into the mold of a cylindrical blank slightly smaller in diameter than the bore, said blank presenting a body of sufficient thickness to maintain its shape

without collapsing during the act of engagement with the record surface and of sufficient thickness to take a surface impression of the record without being bodily distorted, and capable of responding with sufficient force to variations in temperature to detach itself from the mold against the natural suction produced by atmospheric pressure; and of a material having the following characteristics:

(a) Capable of being softened to receive a surface impression and when cold to retain that impression in all of its delicate and highly diversified minute contours.

(b) Having a coefficient of expansion differing in such a degree from that of the material of the mold that by a reduction in temperature common to both, contraction of the duplicate will so exceed the contraction of the mold that the engaging surfaces will be separated to clear the interlocking impressions and permit the duplicate to be readily removed by a direct longitudinal movement.

(c) Having the inherent tendency or such coherence of its particles as will permit the duplicate to be shrunk from the mold without detachment of any portion of its record surface. In other words, the material must have the property of *setting*, so that the record surface will be fixed or permanent before the separation from the mold takes place.

(d) Presenting a sufficiently smooth surface to give satisfactory reproduction.

Of materials having these peculiarities, both Edison and Lambert disclose the use of celluloid, although Edison, for commercial reasons, prefers to employ a hard soap of which phonograph records are commonly made.

3. Softening the blank to such an extent that it may readily conform its surface to the record impressions carried by the mold to correspond accurately with the latter.

4. Expanding the blank so softened to receive such

impression by internal pressure, applied either by a tapering mandrel, as suggested by Edison, or by compressed air, as employed by the appellee, or in any other equivalent and well known way.

5. Subjecting the duplicate to a reduction in temperature to cause it to shrink diametrically and clear the engaging surfaces, notwithstanding the concurrent but smaller reduction in diameter of the mold, thereby permitting the duplicate to be withdrawn without injury to the record.

From this analysis it will be clear that an intelligent conception of an operative duplicating process involved much more than the very bald and general statement made at the hearing by the appellee, and necessitated not only the manufacture of an accurate mold, but the selection of materials having special characteristics, the observation of special dimensions and proportions and the carrying out of special and delicate manipulations. Patentability of Edison's process (and by this we mean patentability in the broad sense) can be safely predicated on the following propositions:

1. Under the authorities the patent is *prima facie* valid and the claims should be given their natural interpretation.
2. This presumption is much strengthened in the present case by reason of the interference with Lambert and the several other interferences in which the Edison application was involved. In other words, instead of the application pending before the examiner alone as an *ex parte* matter, as is usual in most cases, the application was considered by the examiner *ex parte*, and also *inter partes* on Lambert's motions to dissolve; it was considered by the commissioner of patents on the appeal on that motion; it was considered by the examiner of interferences on the merits of the interference; it was considered by the examiners-in-chief on appeal; and it was considered by the commissioner *ex parte* a second

time on the merits. Under the practice it was the duty of any one of the patent office tribunals before whom the case came to indicate any reason why the claim should not be allowed, and notwithstanding the fact that the Lioret and Young patents were in the records of the Edison and Lambert applications, there existed no doubt in the minds of the patent office officials that the subject-matter of the 17th claim, on which the interference was contested, was patentable.

3. The invention was one that was long sought, and when it came it immediately supplied a public demand. Edison was admittedly the first to make a molded duplicate phonographic record.

4. The Lioret and Young patents were fully considered by the examiner, and the Edison claims were drawn for the express purpose of distinguishing from those references.

5. Lambert contended, both in the prosecution of his application and as a witness in the interference, that neither the Young nor the Lioret process was operative.

The situation, then, presented to this court is this: Having anticipated the possibility of duplicating phonograph records in 1878, Edison conceived in 1888 of the instrumentality by which that speculation could be realized, and as a result of continued and expensive experiment accomplished the result in 1897 and applied for his patent promptly thereafter. During these experiments Young and Lioret rushed into the patent office with crude and undeveloped suggestions which never materialized and which were clearly inoperative. Appellee's predecessors filed their application in 1899, secured their patent by accident, were placed in interference with Edison, vigorously contested the same and were defeated. No more solemn notice of Edison's claims can be imagined. They went ahead after the termination of the

interference at their peril. Undoubtedly the appellee is doing what Edison in 1878 hoped to do. In our opinion, no less strongly, appellee is doing that thing in a way equivalent to the way suggested in Edison's patent. And in our opinion, and no less strongly, Edison made a patentable invention on which he secured claims which are capable of a broad interpretation which will include appellee's operations. As a matter of fact, we believe that up to the time of Judge Kohlsaat's decision on final hearing the appellee should have been under the ban of the preliminary injunction issued by Judge Kohlsaat and set aside by him as the result of fraud and misrepresentation on the part of appellee. Yet the fact is that notwithstanding the termination of the Lambert interference more than four years ago and the issue of the Edison patent more than two years ago, the appellee is still enjoying the fruits of its piratical operations. And in defense it relies principally on the purely technical point decided by Judge Kohlsaat that the invention was abandoned by Edison during the period of his expensive and continuous experiments and before the invention was regarded as completed. Coming as he does before this court with a patent having not only the usual but, in view of the circumstances, the unusual presumptions of validity in its favor, disclosing an invention which is undoubtedly new, an invention by which the hopes and aspirations of twenty years were realized and by which the seemingly impossible was accomplished, is he to seek in vain for the broad protection to which we think he is entitled, or is he to be put in the category of the inventor who makes a small and minor improvement and be confined to the exact details of his process to which the claims in terms are not limited? We believe that when the record in this case is carefully

considered the patent will receive the favorable consideration which in our opinion its position, at the very foundation of this art, warrants.

RICHARD N. DYER,
PHILIP C. DVENFORTH,
Counsel for Appellant.

May 5, 1905.

THE OPINIONS OF THE COURT BELOW—COMMENTS THEREON BY MR. DYRENFORTH AT THE HEARING.

Two opinions have been rendered in this case, the first opinion on the argument on final hearing and the second on a petition for rehearing. Neither opinion holds that the claims in issue are invalid in the light of the prior art; neither opinion holds that the process practiced by the defendant is not an infringement of the claims in issue. But the first opinion (Record, p. 60) dismisses the bill for want of equity chiefly on the ground that Mr. Edison unreasonably delayed filing his application for a patent, while the second opinion (Appellant's Brief, Appendix VII), though not in terms retracting the ground of dismissal of the first opinion, asserts as the main ground for denying the petition that the process had been experimented with by Mr. Edison before his numerous employees with no effort to maintain secrecy, so that the patented matters were made public more than two years before the patent was applied for. Each of the opinions is filled with errors of fact as well as of law.

As to the first opinion.

1. In the first paragraph (R, p. 60), the court says:

"On October 26, 1888, complainant filed in the patent office a caveat for a process of forming duplicate phonograms by forcing material made plastic by heat against a matrix formed upon the inside surface of a circular die and then permitting it to cool."

This is correct.

2. In the next paragraph the court says:

"The caveat asserts that the phonogram will contract sufficiently away from the record to allow of its being taken out."

This is also correct.

3. In the next paragraph the court says:

"From October 26, 1888, to March 5, 1898, the date of the application, no steps were taken by the patentee to secure a patent covering the matters set out in the caveat."

This is also correct.

4. Following this the court says:

"From the testimony of Mr. Edison it appears that during that period of ten years the process was in use in Edison's factory."

THIS IS INCORRECT. All the testimony in behalf of the complainant in this case on the subject of Mr. Edison's development and use of the process in issue is to the effect that for at least nine of the ten years mentioned the process was solely in the hands of Mr. Edison's experimenters, Dr. Schultze-Berge and the Wurth, father and son, whose work was confined to Mr. Edison's LABORATORY. No doubt the court below was misled by Mr. Edison's testimony on page 270 of the record, which is as follows:

"14 Q. When did Mr. Wurth start in on this work?

A. In the spring of 1889.

"15 Q. Has he been practically continuously working on the process from that time until the present time? A. Yes, sir; nearly the whole of his time.

"16 Q. And I presume he has made a large number of these molds and has produced copies therefrom by an expanding process as you describe above? A. Yes, sir; he has produced a great many matrices, and

has produced a great many copies from the matrices by expansion, which have been used commercially."

What Mr. Edison says is fully in accord with the other testimony, but it does not mean that the records made by the process were used commercially during the entire ten years, as the lower court appears to assume. On this same point Mr. Wurth testifies as follows (Record, p. 887):

"47 Q. Having reference to the records made, for example, in 1897, what were they used for; do you know what they are used for? A. They are used as masters to make machine duplicates from.

"48 Q. So that, in 1897, as I understand it, you considered the resulting duplicates to be substantially perfect; is that correct? A. Yes, sir; it was considered good."

There is not a fine of testimony in the entire record which mentions any commercial use of the process earlier than that given above by Mr. Wurth. In fact, a commercial use of the process could not reasonably have occurred earlier than about the year 1897, because prior to that time there was almost no market for duplicates. On pages 274 and 275 Mr. Edison testifies as follows:

"46 X-Q. You knew, of course, all the time between 1888 and 1898 of the value that process would have in the arts, did you not? A. I knew in the last two or three years of its value, but in 1888 the phonograph was not commercial, and the company which attempted to commercialize it went into bankruptcy. It was not until seven years later that the public became a buyer of phonographs, but I always believed that they ultimately would appreciate the invention and, therefore, I worked continuously on this process with a view that some day it would be of great value, when the public did take hold, which they did in the last two or three years."

5. The court then says:

"A great many copies of records made from matrices were placed upon the market."

This is correct in one sense, but is incorrect in the sense in which it was evidently intended by the court. The testimony shows that from about the year 1897 onward, and until July, 1902, copies (mechanically produced) of records made from matrices were placed upon the market. It will soon appear that the court was under the impression that the copies made from matrices were themselves placed upon the market, which is not the fact. If it had been the fact, however, it would not have affected the rights of the complainant. Even if Mr. Edison had publicly used the process for two years prior to his application for a patent he would have lost none of his rights thereby.

6. Further on the court says:

"The record disclosed the fact that no particular effort was made to maintain secrecy among the employes in regard to the process. The fact that phonograms were placed upon the market in great numbers is satisfactory evidence that the process was a commercial success."

THIS IS ALSO INCORRECT, since phonograms made by this specific process have never been placed upon the market by the complainant, though shortly before the filing of the Edison application, the process of the patent in suit was used in the Edison factory for commercial purposes—that is, molded records made by the patented process were used as masters from which so-called mechanical duplicates were made, and the latter were sold.

The testimony of Mr. Wurth already quoted from page 287 of the record shows that *mechanical* duplicates of rec-

ords made by the process of the patent in suit were on the market as early as 1897. Mr. Edison testified in February, 1901, and at that time the complainant company was still marketing these mechanical duplicates. On pages 271 and 272 of the record he testifies as follows:

"22 Q. What are the duplicate copies made by this process at the present time used for? A. They are used as masters in the mechanical duplicating process, because they are so perfect that they are indistinguishable from the original master."

7. The court then says:

"Mr. Edison, himself, says: Answer to question 18: 'The process was, in a broad sense, just the same in 1888 as now.'"

This is correct, giving due emphasis to the expression, "in a broad sense."

The showing is, however, that what the Edison caveat of 1888 disclosed was nothing beyond a mere project. About nine years of persistent, laborious and extensive experiment followed before Mr. Edison was able to assure himself that the process could be perfected with sufficient accuracy and refinement to be commercially valuable. The extent of the work done is shown by Mr. Edison's testimony on pages 270-71, also by Mr. Ward's testimony, pages 281 to 287, ending with the answer to Q. 46, and by the stipulated deposition of John F. Randolph, book-keeper at the Edison laboratory, showing that the experiments upon the process of the patent in suit up to March, 1898, when the application for a patent was filed, amounted to more than \$29,500. Nevertheless, in a broad sense, the process was the same in 1888 as it was when Mr. Edison made his application for a patent. At that time, however, it was impossible for Mr. Edison to say that the process could be executed in such a

manner as to be commercially valuable. He believed it could be executed with the required degree of refinement, and hence his persistent and costly experiments; but until he had fully succeeded it was his duty to refrain from applying for a patent. It has often been made a reproach to a patentee that he has rushed into the patent office with a mere undeveloped scheme which he perhaps might never bring to commercial success, and by obtaining generic claims forestall other patentees, who independently conceived, developed and perfected the same invention. Mr. Edison withheld his application until after he had perfected the invention; but even so he was ahead of all competitors in every step of the process. He was the first to conceive; he was the first to disclose to others; he was the first to reduce to practice; he was the first to use commercially, and he was the first to apply for a patent.

8. The court then says:

"In the meantime defendant had perfected his celluloid methods and processes and made a successful commercial product."

THIS IS INCORRECT. There is no evidence whatever that Lambert had perfected his celluloid methods and processes and made a successful commercial product up to the time of filing his application for a patent, which was on August 14, 1899. The evidence is plain that he did not have the process completed, and had not made a successful commercial product, up to October, 1897, because his operations at that time, as described by himself and by his witness Hamilton, were of a crude and impractical nature and were performed upon thin sheets of celluloid cemented into cylinders, while his specification for his patent says that thin walled tubes of celluloid can not successfully be used (page

790, line 27, *et seq.*) The same thing is said by defendant's expert, Mr. Carter, page 174. The filing of the application on August 14, 1893, was a constructive reduction to practice, and there is not a syllable of testimony that Lambert reduced his invention to practice before that date.

Lambert's position, as compared with Edison's, is clearly set out in the opinion of the Board of Examiners-in-Chief, which is printed in the record from page 12 to page 33. After critically analyzing Edison's showing and according him a highly meritorious position with reference to the invention, the board on page 27 turns its attention to Lambert's showing, and the remainder of the opinion is devoted to a critical analysis of it, as follows:

"Lambert alleges that he conceived of the invention in May, 1892; disclosed it to others in the summer of 1893; made a working model in the fall of 1893 by this process; that he embodied a full-sized apparatus and with it reduced to practice in September, 1897, at 67 and 69 Lake street, Chicago, Ill.; and that he has marketed about 2,000 record cylinders made by this process. He filed his application on March 20, 1900.

Our findings on behalf of Edison place his reduction to practice before the date of conception alleged by Lambert. And the filing of the application of Edison was two years prior to the filing of the application of Lambert.

So Edison is first to conceive, to reduce to practice and to file his application; and all that Lambert alleges is a later conception and also a later reduction to practice about four months before Edison filed his application.

Edison is first in every act of invention and first in filing an application containing the invention.

A conception by Lambert later than Edison's conception and a reduction to practice by Lambert later than Edison's Lambert's patent, granted on an application later than Edison's application and while Edison's application was pend-

ing, constitute any bar to the grant of a patent to Edison on his application.

The right to the invention was vested in Edison by actual invention of and industrial use of the invention prior to the application for that patent.

Edison cannot be held to have forfeited the invention to none by failure to file his application, for he filed first, he knew of Lambert's patent covering the claim.

Moreover the claim was made only four months after Lambert's alleged reduction to practice and before any use of the invention to make it known to the public.

Manifestly Lambert has no case on his pleadings.

But Lambert's case is not so strong as his pleadings. There is not enough in his own testimony, if taken to be true, to satisfactorily establish that he ever had any process, prior to the year 1897. This is evident from his answers on cross-examination.

Also, it is evident that he never disclosed the process to his witness Taylor (X-Q 34), and Taylor's evidence does not show any disclosure of it to him.

Up to October, 1897, according to his own testimony, Lambert had not explained this process to any one. He testifies that in October, 1897, he disclosed it to his witness Hamilton, and that between that time and the summer of 1899 he did not disclose it to any one. It was in the summer of 1899 that he met Mr. Philpot, who aided him financially.

Now he says that Hamilton, in October, 1897, saw him carrying out the process with a *thick ring*. That is his testimony as to the disclosure.

Hamilton testifies that he saw Lambert make a record in September or October, 1897, and that he saw others which Lambert said that he made.

Q. 8. Were these records thin, so that they would collapse easily in the hand, or were they thick enough to be self-sustaining? A. They were of varying thicknesses; some of them were thin, and his aim

seemed to be to obtain material by which he could make them thick enough not to collapse.

"Q. 9. I now hand you a record marked 'Exhibit Lambert's 1897 Matrix' (Record) and ask you if you have ever seen anything like it? A. Yes, sir; I cannot tell whether it is the identical record, but it looks like one I saw Mr. Lambert make at 65 Lake street, along some time in the fall of 1897."

In answer to Question 10, p. 37, Hamilton states what he saw Lambert do in October, 1897. The first part of the statement is that he saw him make a matrix as this issue requires that it should be made. Then he described knocking the matrix and then proceeds as follows with his story of what he saw Lambert do:

"He then took a sheet of celluloid, or a strip, and softened it by dipping it in hot water, brought the two ends together and cemented them so as to form a ring just a trifle smaller than the inside of his matrix. Then he dropped his ring into the matrix and filled up the cylindrical space in the inside of the celluloid ring with rubber or some similar material. I think that was his first trial. He then put them into a vise and squeezed the rubber longitudinally, the idea being to have the rubber expand the celluloid cylinder up against the matrix. Before that was done the celluloid was heated in hot water and softened. After it had been in the vise, as he thought, long enough to set it up—perhaps three, five or ten minutes—the vise was loosened and the rubber, celluloid and all put into cold water, when it could be pulled out by hand.

On cross examination Hamilton testified:

"X-Q. 1. You say, Mr. Hamilton, in describing the process which Mr. Lambert carried out in your presence in the fall of 1897, that he took a sheet or strip of celluloid and made a ring out of it; what was the thickness of this sheet? A. I do not know what the thickness was—they were thin, about like a sheet of paper; perhaps a little heavier.

"X-Q. 2. After the impression was made on this

ring of sheet celluloid, was the celluloid mounted on a backing? A. Yes, sir."

"Recl. Q. 1. Do you mean by your last two answers to state that the celluloid ring which you saw formed, or was explained to you by this process, was so thin that it would not stand up? A. It is really impossible for me to tell you as to whether he forced the impression on the thin ring and then backed it up or backed it up first.

"Recl. Q. 2. The records you saw produced, however, were self-sustainable, were they not? A. Yes, sir."

Now there is nothing proven by this testimony more than is stated by Lambert that he did in the summer and fall of 1897. See his answer to Question 21. It is the same old rubber-plug and vise apparatus operated on a celluloid cement-edged ring of the thickness of paper.

His own description of the 1897 procedure (answer to Question 24) and of subsequent discoveries and improvements (answer to Questions 24 and 29) disclose three means for expansion, (1) a rubber plug, (2) a printer's-roll composition and gelatine, and (3) a sectional expanding mandrel. And these answers disclose that there was difficulty in maintaining the joints of his rings made of sheets and in the softening of the blanks, and in determining the time which should elapse between the covering of the ring with the solvent and the forcing of it into the matrix. Now the rubber-plug device was his first device. It was not until afterwards that he discovered the cement for making proper joints and the proper interlin between coating with the solvent and pressing. And when we come to his application we find all of these means for compression thrown away and hot air and steam used in their stead, and we find nothing of cylinders made of sheets cemented at their edges or of these sheets first made and then backed by thick rings. And there is no testimony that any of the records made by him in 1897 were successful in use. And not one of them is produced.

He declares in his patent the making of records from thin

plates and gives the reason why they will not produce true records, and yet he has no evidence certainly establishing that he had in 1897 worked this process in such a manner as to produce a thick record of commercial thickness by press in sure within the matrix. There is nothing more proven in 1897 than the old thin-paper thickness ring with cemented joints which he had been making since the fall of 1893, made by the first devised crude extemporized apparatus.

We cannot regard a process which has not been executed to make the product which his patent calls for, as reduced to practice.

He had conceived of a process the same in general steps as this, which would form rings too thin for use as records. But he had not then conceived of the changes by which that process was afterwards converted into one which will make the stable rings of commercial size, length and thickness which his perfected exhibits present and which will make calls for. When that was first done is not proven. It is proven that none were put on the market until after his October, 1897, experiment in the presence of Hamilton. His own conduct is ample proof that he did not have this process until after the summer of 1900.

According to the evidence he was a poor man in 1897, for from that time on he had no salary and had a wife and child and was earning only about \$30 a month, and had hired a shop with the privilege of paying for its rent what he could and when he could.

Yet then, as he contends, he had perfected this process and had achieved his purpose of making an infrangible cylinder record. If he had, there was, and he knew there was, to 1900 he neither explained this process or showed any product, was not needed.

What was he doing? He says they had no confidence in him. It is invention. That would have been confidence in his process, by showing the new infrangible commercial records giving as good sound as the fragile commercial records giving the process perfected for making them. He had made fragmentary records. It cost almost nothing to make a few

records and show them. He not only never made one complete, which is a fact significant that he knew that there was no use in trying to make one complete until he could make a fragment complete and practical in use—but he has not kept a single one of his incomplete productions of 1897 or any record formed anterior to the filing of his application.

The conclusion is inevitable that his exhibition to Hamilton in 1897 was one of an unsuccessful experiment, and that it was not long after that when he had obtained an apparatus fit to make records of commercial length and thickness carrying records which reproduced the sound as excellently as the original record, or had conceived of and practiced the details of the process necessary to be followed in working the proper apparatus.

A process is not perfected until it is wrought to effect its result; nor, when its result is a product, until it has produced the perfected product fit for industrial use.

That affair of 1897 was not a reduction to practice of the process of this issue. It can only with difficulty be accepted as a disclosure of a conception of the issue.

If so accepted, Lambert has a conception only prior to Edison's application.

It is urged on behalf of Lambert that Edison's application does not disclose the process of the issue and that consequently there is no interference in fact between the two applications or between the application and the patent as the case may be.

The contention specifically is as to fact, that the softening of the wax cylinder is not disclosed in the Edison application.

This matter is within our jurisdiction only for consideration whether we shall act under Rule 125.

The question is one of fact, dependent on the action of a wax ring of considerable diameter and thickness under the influence of heat to change its size to a very small extent, and to enable it to receive impressions in depth so small as one one-thousandth of an inch.

In such a case and in the presence of the testimony of experts in handling wax records, we decline to express any

opinion as to this question of fact or as to the question of an interference in fact.

Especially do we decline for the reason that two tribunals of this office have held that there is an interference in fact and have so held on the face of the applications.

The decision of the Examiner of Interferences awarding priority to Edison is affirmed."

Even after Lambert had accomplished everything in his power, his process, according to Philpot, was unsuccessful commercially. Philpot says, in answer to Q. 6, p. 135, that the defendant company abandoned the original Lambert patent because it was found not commercially valuable, owing to faults which were overcome by the Messer improvement.

On page 136 he says:

"It seemed for a time as if we would have to abandon the making of celluloid records altogether. The Lambert processes were not complete; the final step was lacking. There seemed, so far as we knew, no way in which a commercially perfect celluloid phonograph record could be produced."

In this connection it is to be borne in mind that the defendant company was not organized until about May 1, 1902 (Lambert, p. 99).

With the foregoing before the lower court it seems incomprehensible that the court in its opinion should have made the assertion last quoted.

9. The court then says:

"Complainant, about July 1, 1902, claimed to use the process (X.Q. 110), at which time Edison says (X.Q. 109), mechanical duplicates were abandoned."

This is correct; in fact the complainant had been using it since 1897; though from what immediately follows in the

opinion, it is evident that the court wholly misapprehended the meaning of "mechanical duplicates."

10. The court then says:

"It is to restrain defendant from manufacturing these mechanical duplicates that complainant seeks to invoke the power of the court in support of its alleged rights under the caveat."

THIS IS INCORRECT. So far as appears in this case the defendant is not making, and has never made, "mechanical duplicates." Moreover, the complainant is asserting no rights, and it has no rights to assert, under the CAVEAT. The complainant is asserting its rights under the patent in suit.

11. The court then says:

"No reason is disclosed why ten years should have followed the filing of the caveat."

THIS IS INCORRECT. There is abundant testimony in the record that experiments were continued at heavy expense in Mr. Edison's LABORATORY (now factory), during the whole of that ten years.

12. The court then says:

"In an age when science is making rapid progress one may not be still and see advances made even along lines suggested by him and then after years of forward movement assert his prior claim to the broad invention."

There is nothing in the record which calls for the foregoing propositions. It is founded upon the erroneous assertions of fact noted above.

13. The court then says:

"Complainant and its grantors have slept on their rights."

THIS IS INCORRECT. They did specifically want they had a right to do under the law, as expressed in decisions of the United States Supreme Court.

In *Bates v. Coc*, 8 Otto, p. 31, the Supreme Court says:

"Inventors may, if they can, keep their inventions secret; and if they do for any length of time, they do not forfeit their right to apply for a patent unless another in the meantime has made the invention, and secured by patent the exclusive right to make, use and vend the patented improvement. Within that rule and subject to that condition, inventors may delay to apply for a patent; but the Patent Act provides, as before stated, that the defending party in a suit for infringement may plead the general issue, and, having given the required notice, may prove in defense that the patented invention had been in public use or on sale for more than two years before the alleged inventor filed his application for a patent, and the provision in that event is, that if the issue be found for the party setting up that defense, the judgment or decree shall be in his favor."

In *Agnew v. Woolen Co. v. Jordan*, 7 Wall., 583, the Supreme Court says:

"Undoubtedly, an inventor may abandon his invention, and surrender or dedicate it to the public; but mere forbearance to apply for a patent during the progress of experiments, and until the party has perfected his invention and tested its value by actual practice, affords no just grounds for any such presumption." *Cling Kendall v. Windsor*, 21 Howard, 322, and *Pennock v. Dialogue*, 2 Peters, 1.

14. The court says finally:

"To hold otherwise would be unjust to defendant and others who have developed the art."

THERE IS NO FOUNDATION FOR THE STATEMENT THAT THE DEFENDANT AND OTHERS DEVELOPED THE ART. The showing is that Edison was far in advance of all others, not only in completing the invention, but in applying for a patent for it.

The foregoing opinion is in all about the length of one page of the printed record. It is founded upon a record of upwards of eight hundred pages. The fact that in this short opinion seven out of fourteen of its propositions, and these of the most vital character, were erroneous, led complainant's counsel to think that upon a review of the case, the lower court might reverse its finding. Accordingly a petition for a rehearing was filed, in which the errors were plainly pointed out (Appellant's Brief, Appendix I-VI), but as stated above, the petition was denied (Appellant's Brief, Appendix VII-VIII).

In the supplemental opinion, after saying that the motion was based upon the assumption that the court did not give due weight to the facts tending to show that the delay referred to in the former opinion was due to the fact that complainant was constantly experimenting with a view of creating a perfect commercial article, the court proceeds to set out the steps defined in Mr. Edison's caveat, filed October 26, 1888, and adds:

1. "Whoever experimenting was carried on by complainant during the twelve years between the date of the caveat and that of the patent in suit, did not involve a modification of the said two steps of the process."

The period between the filing of the caveat and the granting of the Edison patent was nearly fourteen years instead of twelve years, due largely to the fact that the application was involved in a series of vexatious interferences, one of which was with Lambert. The period which elapsed between the filing of the caveat and the filing of the Edison application for a patent was about nine years and four months, and the period which elapsed between the filing of the caveat and the earliest use of the invention for commercial purposes in making "mechanical duplicates" was approximately nine years. Properly qualified in the matter of time, the above statement of the court is substantially correct—in a broad sense.

But the Supreme Court in the case of *Elizabeth v. Patumt Company*, 7 Otto, 126, is very clear upon the point that the experiments made may or may not result in a change of the original process. It is sufficient that the inventor was endeavoring to bring the invention to perfection. In that case the court said:

"He may see cause to alter or improve it or not. His experiments will reveal the fact whether any and what alterations may be necessary * * * and though, during all that period, he may not find that any changes are necessary, yet he may be justly said to be using his machine only by way of experiment; and no one would say that such a use, pursued with a bona fide intent of testing the qualities of the machine, would be a public use, within the meaning of the statute. So long as he does not voluntarily allow others to make it and use it, and so long as it is not on sale for general use, he keeps the invention under his own control and does not lose his title to a patent."

2. The court next says:

"There is some confusion in the record as to whether the process was not substantially abandoned."

THIS IS INCORRECT. The showing is to the exact contrary. This error on the part of the court below probably arose from the cross examination of complainant's witness, Mr. Frank L. Dyer, on pages 386-7. Since about July 1, 1902, the complainant has been making its duplicate records under the Miller and Aylesworth patent (Dyer, pp. 385-6). This process is described by Mr. Dyer in answer to X.Q. 105, page 385. It is a casting process, and is included within certain claims of the patent in suit, but is not included within the more specific claims. From the year 1897 until about July 1, 1902, the complainant was using the process covered by the specific claims charged to be infringed by the defendant herein, though it was not putting the duplicates themselves upon the market, but was using them as masters from which to make mechanical duplicates. In X.Q. 109, page 386, defendant's counsel asked Mr. Dyer as follows:

"When did you abandon the specific process set forth in the patent in suit for the process which is now carried on?"

The witness says nothing about any abandonment of the process of the patent in suit, specific or general, but says that the specific process was carried on commercially up to the time of the abandonment of mechanical duplicates.

As we have said the casting process, now used by the complainant, is within the broad claims of the patent in suit, but even if it were not, and even if the complainant had wholly ceased to operate under the patent in suit, this fact would not give the defendant a right to use the patented process. In the case of *Hoc v. Knop*, 27 Fed., 204, decided by Judge Blodgett, there is an expression to the effect that a patentee must either use his invention himself or permit others to use it; but that view has been held to be unsound

by every court since, which has had occasion to consider the same question.

In *Consolidated Roller Mills Co. v. Combs*, 39 Fed., 803, Judge Brown (now Mr. Justice Brown), referring to Judge Blodgett's decision, said:

"I find myself unable to concur in this view. A man has a right to deal as he chooses with his own. I know of no reason why a patentee is bound to make use of his own inventions, or to license others to use them, any more than the owner of a manufacturing establishment is bound to run it for the benefit of his neighbors or employees. As observed in the earlier portion of this opinion, the question of licensing another to use an invention is one which the patentee alone has the right to answer; and courts cannot lawfully compel him to make use of his invention, or to permit others to use it against his will."

In *Campbell Printing Press & Mfg. Co. v. Manhattan Ry. Co.*, 49 Fed. Rep. 935, Judge Lacombe commented upon the decision in *Hoe v. Knap*, as follows:

"Judge Blodgett, however, at final hearing, refused an injunction against an infringer, holding that, 'under a patent which gives a patentee a monopoly, he is bound either to use the patent himself, or allow others proposition, however, are cited in the opinion, nor is such a construction of the statute, which provides that a patentee shall receive a grant of the 'exclusive right to make, use and vend' his invention, supported by argument. Although great weight is always to be given authority when the same question is presented in by this decision to refuse the complainant its injunctions to pay." I do not, therefore, feel constrained to, because it asks more for a license than defendant

In *Heaton Peninsular Button-Fastener Co. v. Eureka Specialty Co.*, 77 Fed. Rep. 294, Judge Larton, speaking for the United States Circuit Court of Appeals for the Sixth Circuit, defines the rights of a patentee as follows:

"If he see fit he may reserve to himself the exclusive use of his invention or discovery. If he will neither use his device, nor permit others to use it, he has but suppressed his own. That the grant is made upon the reasonable expectation that he will either put his invention to practical use, or permit others to avail themselves of it upon reasonable terms, is doubtless true. This expectation is lost alone upon the supposition that the patentee's interests will induce him to use, or let others use, his invention. The public has retained no other security to enforce such expectations. A suppression can endure but for the life of the patent, and the disclosure he has made will enable all to enjoy the fruit of his genius. His title is exclusive, and so clearly within the constitutional provisions in respect of private property that he is neither bound to use his discovery himself, nor permit others to use it. The dictum found in *Hoe v. Knap*, 27 Fed., 204, is not supported by reason or authority."

The above language of Judge Larton is quoted with approval by the Supreme Court in *Bement & Sons v. National Harrow Co.*, 186 U. S., page 70.

3. The court next says:

"It would seem that the efforts made during that period were directed mainly to securing a general article and pertained to details which involved matters of material, finish and the like."

This is substantially correct as far as it goes, and of itself it is totally inconsistent with any theory of abandonment. The efforts, however, extended beyond mere ma-

terial and finish. To make a commercial article loudness and clearness had to be obtained and "scratchiness" of sound overcome.

4. The court next says:

"It is difficult to arrive at a motive for a twelve-years' delay in securing a patent in pursuance of the caveat, unless complainant thought the rights sought to be protected were of no appreciable value and not liable to be appropriated."

No doubt upon reconsideration the court would substitute for the words "twelve-years' delay in securing a patent," the words "nine years and four months in applying for a patent." It might easily be difficult for one not familiar with the difficulties and perplexities of this particular art to understand why the experiments should have necessarily continued over such a long period before the inventor was satisfied with the results, but the evidence is that that length of time was thus consumed, and at an expense of upwards of twenty-nine thousand (\$29,000) dollars; and it would be difficult to conceive of a more complete refutation of any theory of abandonment than is to be found in this fact.

5. The court next says:

"It is a noteworthy fact that nothing was done to patent the process until defendant employed celluloid in the manufacture of records and made them successfully."

THIS IS INCORRECT. and incorrect to a degree which is amazing. The showing is to the exact contrary. Edison filed his application March 5, 1898. At that time he was using the process for commercial purposes (not, however,

marketing the duplicate records themselves, but using them as secondary master records for making "mechanical duplicates," which latter were marketed). At this time, as will be pointed out further on, Lambert had not produced a successful celluloid record, and at that time the defendant had not come into existence.

6. The court next says:

"So far as disclosed in the evidence, every principle claimed by complainant to have been infringed by defendant, and which defendant uses, was fully disclosed in the caveat."

This is correct in a broad sense. In the same broad sense it is correct as to the abortive and worthless results obtained by Lambert in the fall of 1897, which constituted the culmination of his achievements in any possible race which might have existed between himself and Edison; and there is no showing whatever that he progressed any farther than this until more than a year after Edison's application was filed. The earliest showing of a successful and commercial application of the process by Lambert is his application for a patent filed August 14, 1899; and the showing of the testimony is that this was so deficient in practical results as to prove a failure.

7. The court next says:

"It is also logically deducible from the evidence that not only the matters covered by the caveat were made public, but the complainant made free use of said principle and some of the results of experiments in perfecting the record before his numerous employes, and made no effort to maintain secrecy in regard thereto."

THIS IS INCORRECT. There is no showing whatever, from which such a deduction can logically be made.

There is nothing in the record to indicate that Mr. Edison's numerous employes, or any of them, knew anything of the process until it was first used for making secondary master records from a primary master record, which was a little earlier than the application for the patent in suit, and there is no definite showing that any of the ordinary employes knew it then. Of course the two Wurthts understood it, and so did Dr. Schulze-Berge, in his lifetime, because they were employed by Mr. Edison to perform the extended and constant laboratory experiments which were made. It may be true that there is no showing that these experimenters were pledged to secrecy, but the very nature of their employment implies a confidential relation and carries with it an inherent pledge of secrecy, as solemn as any which exists between an attorney and his client.

In *Lyman v. Maypole*, 19 Fed., page 735, Judge Blodgett said:

"The law permits an inventor to construct a machine which he is engaged in studying upon and developing, and place it in friendly hands for the purpose of testing it, and ascertaining whether it will perform the functions claimed for it; and if these machines are strictly experiments, made solely with a view to perfect the device, the right of the inventor remains unimpaired; but when an inventor puts his incomplete or experimental device upon the market and sells it, as a manufacturer, more than two years before he applies for his patent, he gives to the public the device in the condition or stage of development in which he sells it."

See also *Huntington v. Mill Co.*, 109 Fed., 269.

However, the case of *Eliabeth v. Pavement Co.*, *supra*, is the highest authority on this point, and is conclusive in itself.

8. The court next says:

"The record plainly discloses that the patented matters were made public more than two years before the patent was applied for."

THIS IS INCORRECT. There is no showing whatever that the "patented matters" were known to anybody aside from Mr. Edison, his necessary confidential laboratory assistants and perhaps his patent solicitor, more than two years, or at any time before the application for the patent.

9. The court next says, and this as if it has some relation to what has just preceded:

"The caveat remained in force only one year."

It is correct to say that the caveat remained in force only one year, but it is not apparent what primacy this fact had in the mind of the court. Possibly the court supposed that upon the expiration of a caveat the disclosures contained in it became open to the public. If so, the court was wholly wrong. A caveat never becomes accessible to the public, unless by the action of the caveator, or his assigns. A caveat is filed in the secret archives of the Patent Office. Many attorneys regard it as a wholly useless provision of the law. Its purpose is to give the caveator an opportunity to perfect his invention before applying for a patent, and at the same time afford him an opportunity to engage in an interference with any other person who may file an application for the same thing while his caveat is in force. In such an event, he is notified and given ninety days in which to file his application, for the purpose of the interference. The caveat is in no sense a patent, and confers no rights except the mere right of notice as defined above. It remains in force one year, and may be renewed from year to year for an indefinite period. After the caveat has expired by

limitation, whether at the end of one year, or two years, or more, it remains where it always has been, in the secret archives of the Patent Office. The nature and effect of a caveat are fully explained in Volume 2, of Robinson on Patents, forming the subject of Section 11, pages 20 to 26 inclusive. On page 23, under the sub-head "Duration of Caveat" the author says:

"A caveat, once filed, remains in force for one year from the date of its acceptance by the Patent Office. At the expiration of this term it may be renewed for another year by the payment of an additional fee; and so on from year to year at the pleasure of the caveator. If not renewed, it still remains in the secret archives of the Office, although it ceases to secure any rights to the inventor."

10. In conclusion the court says:

"It is unnecessary to pass upon the question of laches. Complainant distinctly gave to the public his basic invention and cannot be heard now to complain that defendant made use of it."

THIS IS INCORRECT under the law, in the light of the facts presented in the record.

It undoubtedly follows from the complete misconception of the evidence on the part of the court below which we have noted above. As a matter of fact, there is not the slightest proof that the invention was in public use or on sale more than two years before Edison's application for a patent, as has clearly been shown. Evidently the court had in mind that the complainant had been practicing the process openly and putting the duplicate records upon the market more than two years before the application for a patent.

Mr. Edison, in his oath to his application, said that the invention had not been in public use or on sale for more

than two years prior to the application. His testimony and that of Mr. Wurth, pertaining to the commercial use, is entirely consistent with that oath. Their statements should, therefore, be so interpreted as to harmonize with the oath, and not be subjected to a forced and unnecessary interpretation which will make them contradict the oath.

The defense seeks to deduce public use on the part of Edison from his preliminary statement in the interference (p. 419), wherein he says he conceived, disclosed to others and reduced to actual practice and made drawings of an apparatus intended for the carrying out of the method or process defined by the issue of said interference, in the month of October, 1888, and that since that time he has continuously practiced the said method or process at his laboratory at Orange, New Jersey, and has made a great number of duplicate records from said process. A preliminary statement is a mere pleading. It is not evidence of any fact in an interference. It is only a general statement, serving as a limitation upon the testimony. This preliminary statement is supported by the caveat, together with the testimony of Mr. Edison and Mr. Wurth. A process may of course be "practiced" either experimentally or commercially. Comparing the preliminary statement with the testimony referred to it will be seen that they are perfectly consistent with each other. Lambert could have raised the issue of public use against Edison in the Patent Office, or it could have been raised by the office *ex sponte*, but nothing of the sort was done. In this case the preliminary statement and the showing which it forestalled should be understood as they were obviously intended, and as they were understood by the Patent Office.

Oct. 21, 1905.

P.C. Dyrenforth, Esq.,
Monadnock Bldg.,
Chicago, Ill.

Dear Sir:-

LAMBERT SUIT: Your favor of the 18th inst. has been forwarded to me for reply. Upon carefully considering the situation as presented by Judge Seaman's opinion, it seems to me that after all on the question of public use, as disclosed by the record, the Circuit Court of Appeals were probably right. The case, therefore, seemed practically hopeless, entirely aside from the intimation in the opinion that there was no infringement. I therefore talked the case over with Mr. Edison and he agrees with me that under the circumstances, we should do nothing further with the case. As a matter of fact, the Lambert Company has been practically put out of business, so that one of our objects has been effected.

Yours very truly,

YLD/ARK.

Legal Department Records
Phonograph - Case Files

*National Phonograph Company v. Lambert Company and Thomas B.
Lambert (Edison Patent 414,761)*

*Edison Phonograph Company v. Lambert Company and Thomas B.
Lambert (Edison Patents 382,418 and 382,462)*

This folder contains material pertaining to two suits brought by the National Phonograph Co. and the Edison Phonograph Co. against the Lambert Co. and Thomas B. Lambert in the U.S. Circuit Court for the Northern District of Illinois, Northern Division. The cases were both initiated in December 1900 and involved Edison's U.S. Patents 414,761, 382,418, and 382,462 on phonograph record blanks. Together, these cases were also known as the "tapered bore case." The selected items consist of the following portions of the complainant's printed record: index, bills of complaint, and testimony of Edison.

Legal Box 169

United States Circuit Court,

Northern District of Illinois,

Northern Division.

NATIONAL PHONOGRAPH COMPANY,
Complainant, } IN EQUITY.
vs. }
LAMBERT COMPANY and THOMAS B. LAMBERT,
Defendants. }

EDISON PHONOGRAPH COMPANY,
Complainant, } IN EQUITY.
vs. }
LAMBERT COMPANY and THOMAS B. LAMBERT,
Defendants. }

COMPLAINANTS' RECORD.

ISHAM, LINCOLN & BEALE,
Solicitors for Complainants.

RICHARD N. DVER,
Of Counsel.

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TO THE HONORABLE THE JUDGES OF THE UNITED STATES
CIRCUIT COURT FOR THE NORTHERN DISTRICT OF
ILLINOIS, NORTHERN DIVISION.

National Phonograph Company, a corporation organized and existing under and by virtue of the laws of the State of New Jersey and having its principal place of business at Orange, in the County of Essex and State of New Jersey, brings this, its bill of complaint, against Lambert Company, a corporation organized and existing under and by virtue of the laws of the State of Illinois and having its principal place of business in the City of Chicago in said State, and Thomas B. Lambert, a resident of and having a regular and established place of business in the said City of Chicago, in the State of Illinois, individually, and as an official of the said Lambert Company.

And thereupon your orator complains and says:

I. That heretofore and before the 12th day of November, 1889, Thomas A. Edison, being then, as now, a resident of Llewellyn Park in the County of Essex and State of New Jersey, and a citizen of said State, was the original, first and sole inventor of certain new and useful improvements in phonogram blanks, fully described in the letters patent hereinafter mentioned, and which had not been known or used by others in this country, and which had not been abandoned, nor patented or described in any printed publication in this or any foreign country, before his invention thereof, and which were not, prior to his application for letters patent therefor, as hereinafter mentioned, in public use or on sale in this country for more than two years.

II. That the said Edison, being so as aforesaid the first inventor and discoverer of the said improvements,

made application in writing to the Commissioner of Patents of the United States for the grant of letters patent therefor, and paid into the Treasury of the United States the fee required by law, and then and there fully and in all respects complied with all the necessary conditions and requirements of the statutes of the United States in such case made and provided, and thereupon, after the examination having been made by the Commissioner of Patents as to the novelty and utility of the said invention, as provided by law, the Commissioner of Patents caused to be issued to the said Edison letters patent in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents, and bearing date the said 13th day of November, 1889, and numbered 414,761, and that the said letters patent did grant unto the said Edison, and unto his heirs and assigns, for the term of seventeen years from the date thereof, the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof, as by said letters patent or a duly authenticated copy thereof in Court to be produced will more fully and at large appear.

III. That heretofore and before the commission by the defendants of the acts hereinafter complained of, your orator became, by virtue of mesne assignments in writing duly executed and delivered and recorded in the Patent Office of the United States, vested with the full and entire right, title and interest in and to said letters patent numbered 414,761, and that it has ever since been and now is possessed of the same.

IV. That your orator is engaged in the manufacture and sale of phonographs and supplies therefor, and that in carrying on its business it has manufactured and is manufacturing in large quantities phonogram-blanks employing and containing the invention described and claimed in and by said letters patent; that it has in-

vested and expended large sums of money and has been to great trouble in and about the said invention, for the purpose of introducing the same and making the same profitable to itself and to the public; that phonogram-blanks employing and containing the invention patented as aforesaid have been in great demand and are of great benefit and advantage to your orator and to the public, and that the public has generally acknowledged and acquiesced in the rights of your orator, and your orator believes that it will realize and receive large gains and profits therefrom if infringement by the said defendants and their confederates shall be prevented.

V. That, on information and belief, phonogram-blanks heretofore, and now being, placed upon the market by your orator and its processors in the title to said letters patent and made under and in accordance with the said letters patent have been duly marked with the word "Patented," together with the date of said letters patent as aforesaid, and further your orator avers, on information and belief, that the defendants were duly notified of the said letters patent and of the infringement heretofore charged, but that they continued after such notice to make and use phonogram-blanks embodying the said invention.

VI. That the defendants, well knowing the premises and the rights secured to your orator as aforesaid but contriving to injure it and to deprive it of the benefits and advantages which might and otherwise would accrue unto it from the said invention, did, after the grant of said letters patent and after the acquiring by your orator of its exclusive rights therein and before the commencement of this suit, as your orator is informed and believes, within the Northern District of Illinois, Northern Division, aforesaid, and elsewhere in the United States, without license or allowance and against the will of your orator and in violation of its

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rights, jointly and severally, unlawfully and wrongfully make, use and sell or cause to be made, used and sold, and are now making, using and selling or causing to be made, used and sold, phoenogram-blanks employing and containing the invention set forth in said letters patent, that they still continue so to do, and that they are threatening to continue the aforesaid unlawful acts to a large extent, all in defiance of the rights secured to your orator as aforesaid and to its

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great and irreparable loss and injury, and by which it has been and still is being deprived of great gains and profits which it might and otherwise would have obtained but which have been received and enjoyed by the said defendants through their said unlawful acts and doings. And your orator further shows that as to how many phoenogram-blanks by the defendants, as aforesaid, unlawfully made or used or sold, and as to the extent of the gains and profits received and enjoyed by them from such unlawful making or using or selling, your orator is ignorant and prays a discovery thereof.

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VII. That the manufacture, use and sale of phoenogram-blanks employing and containing the said invention set forth in said letters patent by the said defendants and their preparation for and avowed determination to continue the same and their other aforesaid unlawful acts, in disregard and defiance of the rights of your orator, have the effect to and do encourage and induce others to venture to infringe said letters patent.

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VIII. Your orator therefore prays that the said defendants Lambert Company and Thomas P. Lambert individually and as an official of the said Lambert Company, and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every of them, may be perpetually restrained and enjoined by the order and injunction of this Honorable Court from directly or indirectly making, constructing, using, vending, delivering, working or putting into

operation or use, or in any wise counterfeiting or imitating, the said invention or any phoenogram blanks made or operated in accordance therewith or like or similar to those which the said defendants have heretofore made, sold, constructed, operated or used, and that the said defendants may be decreed to pay the costs of this suit, and that your orator may have such other and further relief as to this Honorable Court shall seem meet and shall be agreeable to equity.

IX. Your orator further prays that an injunction *pendente lite* be granted, issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendants and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every of them, to the same purport and tenor and effect as heretofore prayed for with regard to said perpetual injunction.

X. And inasmuch as your orator can have no adequate relief save in this Court, to the end and therefore that the said defendants may, if they can, show why your orator should not have the relief hereby

prayed and may, but not upon oath, an answer under oath being hereby expressly waived, according to their best and utmost knowledge, remembrance, information and belief, and according to the best and utmost knowledge, remembrance, information and belief of the officers of the said defendant Lambert Company, full, true, direct and perfect answer make to the premises and to all the several matters heretofore stated and charged, as fully and particularly as if severally and separately interrogated as to each and every of said matters, and may be compelled to account for and pay to your orator the profits by them acquired and the damages suffered by your orator from the aforesaid unlawful acts, and that the Court may assess said profits and damages and may increase the damages to a sum not exceeding three times the amount thereof.

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Bill of Complaint.

May it please your Honors to grant unto your orator the writ of subpoena issuing out of and under the seal of this Honorable Court, directed to the said defendants Lambert Company and Thomas B. Lambert, individually and as an official of the said Lambert Company, commanding them and each of them, by a certain day and under a certain penalty, to be and appear in this Honorable Court, then and there to answer to the premises and to stand to and abide such order and decree as may be made against them.

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And your orator will ever pray.

NATIONAL PHONOGRAPH CO.
By WILLIAM E. GILMORE,
President.

ISHAM, LINCOLN & BEALE,
Solicitors for Complainant.
RICHARD N. DYER,
Of Counsel for Complainant.

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STATE OF NEW JERSEY, } ss.:
County of Essex, }

24

WILLIAM E. GILMORE, being duly sworn, deposes and says that he is the president of National Phonograph Company, the complainant named in the foregoing bill of complaint; that he has read the said bill to his own knowledge, save as to the matters therein stated to be alleged on information and belief, and as to those matters he believes it to be true; and that he verily believes Thomas A. Edison to be the first, original and sole inventor of the improvements in phonogram blanks set forth in Letters Patent No. 414,761, referred to in the said bill of complaint.

WILLIAM E. GILMORE.

Subscribed and sworn to by }
me this 29th day of }
December, 1900.

J. F. RANDOLPH,
Notary Public for New Jersey.

[SEAL.]

Bill of Complaint.

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TO THE HONORABLE THE JUDGES OF THE UNITED STATES
COURT FOR THE NORTHERN DISTRICT OF
ILLINOIS, NORTHERN DIVISION:

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Edison Phonograph Company, a corporation organized and existing under and by virtue of the laws of the State of New Jersey and having its principal place of business at Orange, in the County of Essex and State of New Jersey, brings this its bill of complaint against Lambert Company, a corporation organized and existing under and by virtue of the laws of the State of Illinois and having its principal place of business in the City of Chicago in said State, and Thomas B. Lambert, a resident of and having a regular and established place of business in the said City of Chicago in the State of Illinois, individually and as an official of the said Lambert Company.

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And thereupon your orator complains and says:

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I. That heretofore and before the 8th day of May, 1888, Thomas A. Edison, being then, as now, a resident of Llewellyn Park in the County of Essex and State of New Jersey, and a citizen of said State, was the original, first and sole inventor of certain new and useful improvements in phonogram-blanks, fully described in the letters patent hereinafter mentioned, and which had not been known or used by others in this country and which had not been abandoned nor patented or described in any printed publication in this or any foreign country, before his invention thereof, and which were not, prior to his application for letters patent thereof, as hereinafter mentioned, in public use or on sale in this country for more than two years.

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II. That the said Edison, being so as aforesaid the first inventor and discoverer of the said improvements, made application in writing to the Commissioner of Patents of the United States for the grant of letters patent therefor, and

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paid into the Treasury of the United States the fees required by law, and then and there fully and in all respects complied with all the necessary conditions and requirements of the statutes of the United States in such case made and provided, and thereupon, after due examination having been made by the Commissioner of Patents as to the novelty and utility of the said invention, as provided by law, the Commissioner of Patents caused to be issued to the said Edison letters patent in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents and bearing date the said 8th day of May, 1888, and numbered 382,418, and that the said letters patent did grant unto the said Edison and unto his heirs and assigns, for the term of seventeen years from the date thereof, the exclusive right to make, use and vend the said invention throughout the United States and the territories thereof, as by said letters patent or a duly authenticated copy thereof in Court 31 to be produced will more fully and at large appear.

III. That heretofore and before the said 8th day of May, 1888, the said Thomas A. Edison, being then, as now, a resident of Llewellyn Park, in the County of Essex and State of New Jersey, and a citizen of said State, was the original, first and sole inventor of certain other new and useful improvements in phonogram blanks, fully described in the letters patent hereinafter mentioned, and which had not been known or used 32 by others in this country, and which had not been abandoned nor patented or described in any printed publication in this or any foreign country, before his invention thereof, and which were not, prior to his application for letters patent thereof as hereinafter mentioned, in public use or on sale in this country for more than two years.

IV. That the said Edison, being so as aforesaid the first inventor and discoverer of the said improvements,

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made application in writing to the Commissioner of Patents of the United States for the grant of letters therefor, and paid into the Treasury of the United States the fees required by law, and then and there fully and in all respects complied with all the necessary conditions and requirements of the statutes of the United States in such case made and provided, and thereupon, after due examination having been made by the Commissioner of Patents as to the novelty and utility of the said invention, as provided by law, the Commissioner of Patents caused to be issued to the said Edison letters patent in due form of law, under the seal of the Patent Office of the United States, signed by the Secretary of the Interior and countersigned by the Commissioner of Patents and bearing date the said 8th day of May, 1888, and numbered 382,402, and that the said letters patent did grant unto the said Edison and unto his heirs and assigns, for the term of seventeen years from the date thereof, the exclusive right to make, use and vend the said invention throughout the United States and the Territories 35 thereof, as by said letters patent or a duly authenticated copy thereof in Court to be produced will more fully and at large appear.

V. That heretofore and before the commission by the defendants of the acts hereinafter complained of, your orator became, by virtue of an assignment in writing duly executed and delivered and recorded in the Patent Office of the United States, 36 and in and to said Letters Patent numbered 382,418 and 382,402, and each and every of them, and that it has ever since been and now is possessed of the same.

VI. That the inventions described and claimed in said several letters patent are capable of conjoint use in one and the same apparatus, and that in the apparatus herein complained of they are, in fact, so conjointly used.

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VII. That your orator is engaged in the manufacture and sale of phonographs and supplies therefor, and that in carrying on his business it has manufactured, and is manufacturing in large quantities, phonogram blanks employing and containing the several inventions described and claimed in and by said several letters patent; that it has invested and expended large sums of money, and has been to great trouble in and about the said several inventions for the purpose of introducing the same and making the same profitable to itself and to the public; that phonogram blanks employing and containing the several inventions patented as aforesaid have been in great demand, and are of great benefit and advantage to your orator and to the public, and that the public has generally acknowledged and acquiesced in the rights of your orator, and your orator believes that it will realize and receive large gains and profits therefrom if infringement by the said defendants and their confederates shall be prevented.

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VIII. Your orator avers, on information and belief, that phonogram blanks heretofore and now being placed upon the market by your orator and its predecessors in the title to said several letters patent, and made under and in accordance with the said several letters patent have been duly marked with the word "Patented," together with the respective dates of said letters patent as aforesaid; and further, that your orator avers on information and belief, that the defendants were duly notified of the said several letters patent and of the infringement hereinafter charged, but that they continued after such notice to make and use phonogram blanks embodying the said several inventions.

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IX. That the defendants, well knowing the premises and the rights secured to your orator as aforesaid, but contriving to injure it and to deprive it of the benefits and advantages which might and otherwise would accrue unto it from the said several inventions, did, after

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the grant of said several letters patent and after the acquiring by your orator of its exclusive rights therein and before the commencement of this suit, as your orator is informed and believes, within the Northern District of Illinois, Northern Division aforesaid, and elsewhere in the United States, without licence or allowance and against the will of your orator and in violation of its rights, jointly and severally, unlawfully and wrongfully make, use and sell, or cause to be made, used or sold, and are now making, using and selling, or causing to be made, used and sold, phonogram blanks employing and containing the several inventions set forth in said several letters patent; that they still continue so to do, and that they are threatening to continue the aforesaid unlawful acts to a large extent, all in defiance of the rights secured to your orator as aforesaid and to its great and irreparable loss and injury, and by which it has been and still is being deprived of great gains and profits which it might and otherwise would have obtained, but which have been received and enjoyed by the said defendants through their said unlawful acts and doings. And your orator further shows that as to how many phonogram blanks by the defendants as aforesaid unlawfully made or used or sold, and as to the extent of the gains and profits received and enjoyed by them from such unlawful making or using or selling, your orator is ignorant and prays a discovery thereof.

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X. That the manufacture, use and sale of phonogram blanks employing and containing the said several inventions set forth in said several letters patent by the said defendants, and their preparation for and avowed determination to continue the same and their other aforesaid unlawful acts, in disregard and defiance of the rights of your orator, have the effect to do and encourage and induce others to venture to infringe the said several letters patent.

XI. Your orator therefore prays that the said defendants, Lambert Company and Thomas B. Lambert,

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individually and as an official of the said Lambert Company, and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every one of them, may be perpetually restrained and enjoined by the order and injunction of this Honorable Court from directly or indirectly making, constructing, using, vending, delivering, working or putting into operation or use, or in any wise counterfeiting or imitating, the said several inventions, or any phonograph blanks made or operated in accordance therewith or like or similar to those which the said defendants have heretofore made, sold, constructed, operated or used, and that the said defendants may be decreed to pay the costs of this suit, and that your orator may have such other and further relief as to this Honorable Court shall seem meet and as shall be agreeable to equity.

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XII. Your orator farther prays that an injunction *pendente lite* be granted, issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendants and their officers, servants, agents, attorneys, employees, workmen and confederates, and each and every of them, to the same purport and tenor and effect as heretofore prayed for with regard to said perpetual injunction.

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XIII. And for as much as your orator can have no adequate relief save in this Court, to and therefore that the said defendants may, if they can, show why your orator should not have the relief hereby prayed and may, but not upon oath, in answer under oath and being hereby expressly waived, according to their best and utmost knowledge, remembrance, information and belief, and according to the best and utmost knowledge, remembrance, information and belief, of the officers of the said defendant Lambert Company, full, true, direct and perfect answer make to the before stated and charged, as fully and particularly

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as if severally and separately interrogated as to each and every of said matters, and may be compelled to account for and pay to your orator the profits by them acquired and the damages suffered by your orator from the aforesaid unlawful acts, and that the Court may assess said profits and damages and may increase the damages to a sum not exceeding three times the amount thereof.

May it please your Honors to grant unto your orator the writ of subpoena issuing out of and under the seal of this Honorable Court, directed to the said defendants, Lambert Company and Thomas B. Lambert individually and as an official of the said Lambert Company, commanding them and each of them, by a certain day and under a certain penalty, to be and appear in this Honorable Court, here and there to answer to the premises and to stand to and abide such order and decree as may be made against them.

And your orator will ever pray.

EDISON PHONOGRAPH COMPANY,
By THOMAS A. EDISON,
President.

IRHAM, LINCOLN & BEALE,
Solicitors for Complainant.
RICHARD N. DYER,
Of Counsel for Complainant.

STATE OF NEW JERSEY, }
County of Essex, } DE:

THOMAS A. EDISON, being duly sworn, deposes and says that he is the president of Edison Phonograph Company, the complainant named in the foregoing Bill of Complaint; that he has read the said bill and knows the contents thereof; that the same is true to his own knowledge, save as to the matters therein stated to be

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alleged on information and belief, and as to those matters he believes it to be true; and that he verily believes himself to be the first, original and sole inventor of the improvements in phonogram blanks set forth in Letters Patent Nos. 389,418 and 389,462, referred to in the said bill of complaint.

THOMAS A. EDBON.

Subscribed and sworn to before me this 29th day of December, 1902.

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[SEAL.]

J. F. RANDOLPH,
Notary Public for New Jersey.

UNITED STATES CIRCUIT COURT,

NORTHERN DISTRICT OF ILLINOIS—NORTHERN DIVISION.

65

NATIONAL PHONOGRAPH COMPANY,
Complainant,

vs.

LAMBERT COMPANY and THOMAS B.
LAMBERT,
Defendants.

66

In Equity.

THOMAS F. SHEEHAN, Esq.,
Solicitor for Defendants,
Marquette Building, Chicago, Illinois:

Please take notice that the complainant herein will take the testimony of Frank L. Dyer, of Montclair, in the State of New Jersey, and others, each and all of whom reside more than one hundred (100) miles from the place of trial herein, and more than one hundred

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(100) miles from any place at which a Circuit Court of the United States for the Northern District of Illinois, Northern Division, is appointed to be held by law, at final hearing for use on behalf of the complainant, before John R. Taylor, Esq., a notary public in and for the County of Kings with certificate filed in New York County, who is not of counsel or interested in this cause, at the office of Dyer, Edmonds & Dyer, No. 31 Nassau street, in the City and State of New York, on the 21st day of January, 1902, at 11 o'clock A. M., and thereafter from day to day as the taking of the depositions may be adjourned; and such testimony will be so taken in accordance with the provisions of Sections 803, 804 and 805 of the Revised Statutes of the United States, and the equity rules.

Dated January 10, 1902.

ISHAM, LINCOLN & BEALE,

Solicitors for Complainant.

Due and timely service of the above notice is hereby admitted this 10th day of January, 1902.

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THOMAS F. SHEEHAN,
Solicitor for Defendants.

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UNITED STATES CIRCUIT COURT,
NORTHERN DISTRICT OF ILLINOIS.

EDISON PHONOGRAPH COMPANY,
Complainant,

vs.
LAMBERT COMPANY and THOMAS B.
LAMBERT,
Defendants.

In Equity.

NATIONAL PHONOGRAPH COMPANY,
Complainant,

vs.
LAMBERT COMPANY and THOMAS B.
LAMBERT,
Defendants.

In Equity.

WEST ORANGE, NEW JERSEY, October 13th, 1902.

Met pursuant to notice.

Present—RICHARD N. DYER, Esq., for complainants;
328 THOMAS F. SHERIDAN, Esq., for defendants.

THOMAS A. EDISON, a witness called on behalf of the complainants in the above-entitled suits, having been first duly sworn, deposes and says in answer to interrogatories propounded to him by Mr. Dyer as follows:

1 Q. You are the inventor named in the three patents in suit, numbered 382,418, 382,462 and 414,761, are you not?
A. Yes.

2 Q. Have these inventions been utilized commercially, and if so, to what extent?

A. They have been utilized to a very great extent commercially. From the time that the first commercial phonograph was put on the market to the present time, there have been upwards of two hundred thousand phonographs sold to the public in all parts of the world, all of which have employed the inventions of the patents in suit. Most of these phonographs have been sold by the National Phonograph Company, and also by another company who sell the phonograph under the name of the "Graphophone," which I license under my patents. In fact, all commercial phonographs which have been sold employ these inventions.

3 Q. What relation did the inventions of the patents in suit bear to the development of the commercial phonograph?

A. The inventions in the patents in suit are one of several which made the phonograph commercially practical. Previous to 1889 a large number of attempts had been made to devise a phonograph which could be handled by inexperienced persons, so that a machine shipped to any part of the world could be worked by any person without the necessity of having an expert to show them how to manipulate it, but just from simple printed instructions. In 1889, by a number of small inventions, this object was accomplished, and from that time the phonograph in the hands of the public worked successfully and was commercial. One of the earlier forms of phonographs was put out by the Graphophone Company, but on account of the complication of the devices used it was found not to be commercial, and all the machines put out were withdrawn from the market. The Graphophone Company then took a license under our patents, and have since put out the phonograph in the same form as is now universal, employing the inventions in this litigation.

The devices which made the phonograph commercial when used by experts were very simple in

character, but were enormously important in accomplishing the object. These inventions were the dispensing with the use of mechanism to hold the cylinder in position on the phonograph, and the substitution of the simple device of a tapering mandrel and tapering cylinder. Another invention which helped to make it practical was the use of a floating weight upon which the recorder and reproducing points were placed. It was found almost impossible to get the cylinders to run true, and therefore the floating weight with its recording point permitted the use of cylinders which were not accurately true when rotated. The third device which helped to make it commercial was the use of a cylindrical recording and reproducing point of hard material, like sapphire. It is almost wholly due to these three devices that the phonograph was made commercial.

It was found essential that the blank should be made wholly of the same material or two materials both having the same coefficient of expansion. A large number of attempts were made to form a compound cylinder with wax for the outer recording material, but on account of not being able to obtain a cylinder the inner portion of which had the same coefficient of expansion as the outer, the compound cylinder had to be abandoned, on account of the large amount of leakage due to shipment and changes of temperature. Finally a cylinder made entirely of the same material was adopted, and this is shown, particularly in patent No.

329 414,761. This blank being of the same material throughout would withstand any change in temperature. At first the blank was runned out, tapered, and the inner part was solid, but it was found after a time that a continuous surface did not hold as well on the tapering mandrel, and that wax chips and dirt would get inside and tend to break the cylinder when it was forced on, and also make it run out of true, and therefore an inner rib was cast with the cylinder and this was tapered to fit the mandrel of the phonograph. This permitted of obtaining the outer surface of the cylin-

der more true when the phonograph was revolved, and to also hold the cylinder with sufficient force so that in the act of turning off the cylinder to make a new record it would not be forced along the taper and loosened. In fact, by this simple device all mechanism for securing the cylinder was dispensed with, and the most inexperienced person could at once get the cylinders on and off the phonograph without any instructions or any skill required, and this form with these ribs has been universal since their introduction, and many millions have been sold. They are employed also by the Graphophone Company and all foreign makers of phonograph cylinders.

CROSS-EXAMINATION BY MR. SHERIDAN:

4 s-Q. It was old long before you made this invention to use tapered cylinders in other arts, was it not, Mr. Edison?

A. I don't know.

5 s-Q. Then you thought you had made a tapered cylinder for the first time in mechanics, a cylinder with a tapered bore; did you?

A. I don't know that. I know that the invention solved the problem in a simple manner—what we were after.

6 s-Q. Didn't you know that in the art of mechanics generally, tapered spindles were old?

A. I don't know whether I did or not. I don't remember.

7 s-Q. Don't you know that they have used in watch lathe tapered bearing for a long time, tapered bushings?

A. I don't recall to mind any just now. If they have, it is a matter of record.

8 s-Q. Then you thought that you were the inventor of a tapered mandrel and a tapered cylinder in the arts generally?

A. I thought I was the inventor of a way of holding a phonograph cylinder on a tapered mandrel.

341

9 x-Q. And you never know of any other tapered cylinder, of any other description, ever being held on a tapered mandrel?

A. I don't call them to mind now. I suppose there have been tapering mandrels with things put on them and held there, so that they could be turned off, but I don't remember any working by mere friction.

10 x-Q. In this patent No. 382,462, the subject matter was intended to overcome the difficulty that you experienced in having phonogram blanks made of wax and another material inside having a different coefficient of expansion, was it not?

A. Yes.

11 x-Q. The objection was not to the inner material, but the objectionable feature you found was the wax would crack in shipping or due to changes in temperature?

A. The difference of expansion between the inner and the outer surface caused it to crack. Therefore I made it all of one material and got rid of this objection.

12 x-Q. Now supposing that the outer surface, instead of being wax, were made of hard rubber or a material like that, would it have cracked then due to the difference of expansion between it and the inner material?

A. That would depend upon the kind of inner material. If there was a difference in the coefficient of expansion it might have cracked.

13 x-Q. But you never found any other material that cracked besides wax, did you, or a wax-like material?

A. If you use the wax-like material very soft it won't crack. In fact in the early days the Graphophone Company used a paper cylinder on which there was wax on the outside, but the wax was so soft that under the varying temperatures it would give and not crack. But we desired to use a wax that was very hard, as a very hard wax makes a better record and stands up; when the reproducing point is passed over it, it is not smoothed down as it would be with a very soft wax.

345

14 x-Q. How thick was your coating of hard wax?

A. Well, we had them in various thicknesses. Sometimes we had them five thousandths, sometimes twenty thousandths, sometimes even thicker.

15 x-Q. How thick could you go on the outer coating? What was the thickest you ever used of wax with the inner tube of different material?

A. I think the thickest wax coating we have used was about thirty thousandths of an inch.

16 x-Q. And when you abandoned this inner tube or sustaining material you also made the wax cylinder not only homogeneous but a great deal thicker, did you, not?

A. Yes, sir; so that it would have strength of its own and didn't require the backing.

17 x-Q. Do you recollect how thick you made it when you first abandoned the different material?

A. My impression is that it was about three-sixteenths thick outside of the ribs.

18 x-Q. Did your first phonograms made entirely of wax contain ribs?

A. At first they didn't have any ribs, but they would not hold on well.

19 x-Q. How thick were the materials that didn't have any ribs?

A. My impression is they were about a quarter of an inch.

20 x-Q. And the reason they didn't hold well without ribs was that the dust would accumulate between the two tapes, the taper of the bore and the taper of the spirals?

A. Yes; for that reason and for the reason they didn't have the elasticity between the ribs.

21 x-Q. What do you mean by "elasticity between the ribs"?

A. The wax has a certain degree of elasticity, and in forcing them on the mandrel this elasticity was used to a certain extent.

22 x-Q. But the principal reason, however, was to allow spaces in which dirt in clips might accumulate that wouldn't throw them out of true; is that not so?

349

A. That was one of the reasons, and another was to get the elasticity and also to permit ease of reaming in forming the cylinder, so it was cheaper.

23 x-Q. It is not as hard to ream a cylinder made with internal ribs as one that is solid?

A. No, not so much.

24 x-Q. There is less material to ream?

A. Yes, sir; you can ream it truer.

25 x-Q. Did you ever make any celluloid records?

350

A. I think we have.

26 x-Q. How long ago?

A. Six or seven years ago.

27 x-Q. By the same process as you make these blanks described in patent No. 414,701?

A. No, sir; by another process.

28 x-Q. Can you make a celluloid record by the process described in this patent?

A. I never tried.

29 x-Q. Do you think you could?

351

A. I don't know.

Signature and certificate waived.

Complainant's counsel gives notice that the proof for the complainant is closed, and that he will put the case on the calendar for hearing as soon as permitted by the rules of the Court.

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**Legal Department Records
Phonograph - Case Files**

***New Jersey Patent Company v. Columbia Phonograph Company,
General***

This folder contains material pertaining to the suit brought by the Edison interests against the Columbia Phonograph Co., General, in the U. S. Circuit Court for the District of New Jersey. The case was initiated in April 1905 and involved Jonas W. Aylsworth's U. S. Patent 782,375 on record blank composition. The case, also known as the "carnauba wax case," was settled in June 1908, along with the *American Graphophone Company v. National Phonograph Company* cases ("Macdonald composition cases") heard in the same court. The selected items consist of the following portions of the printed record: index, bill of complaint, and testimonies of Edison and Aylsworth.

Legal Box 166

CIRCUIT COURT OF THE UNITED STATES

District of New Jersey.

NEW JERSEY PATENT COMPANY

vs.

COLUMBIA PHONOGRAPH COMPANY, GENERAL.

In Equity. On Letters Patent No. 782,375.

RECORD.

FRANK L. DYER,
Solicitor for Complainant.

FRANK L. DYER,
DELOS HOLDEN,
Of Counsel.

PHILIP MAURO,
Solicitor for Defendant.

PHILIP MAURO,
C. A. L. MASSIE,
Of Counsel.

CIRCUIT COURT OF THE UNITED STATES

District of New Jersey.

NEW JERSEY PATENT COMPANY

vs.

COLUMBIA PHONOGRAPH COMPANY, GENERAL

In Equity. On Letter's Patent No. 782,375.

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United States Circuit Court, District of New Jersey.

NEW JERSEY PATENT COMPANY,
Complainant,
vs.
COLUMBIA PHONOGRAPH COMPANY,
GENERAL,
Defendant.

Bill in Equity on
Letters Patent
No. 789,375.

Bill of Complaint.

(Filed April 3, 1905.)

To the Honorable the Judges of the United States Circuit Court
for the District of New Jersey.

NEW JERSEY PATENT COMPANY, a corporation created, organized and existing under and by virtue of the laws of the State of New Jersey and having its principal office at West Orange, County of Essex, in said State, brings this, its bill of complaint against COLUMBIA PHONOGRAPH COMPANY, GENERAL, a corporation created, organized and existing under and by virtue of the laws of the State of West Virginia, and having a regular and established place of business at Paterson in the District of New Jersey, wherein some of the acts of infringement hereinafter complained of were committed.

And thereupon your orator complains and says:

1. That heretofore and before the 29th day of October, 1903, JONAS W. AYLSWORTH of East Orange in the State of New Jersey and a citizen of the United States was the original, first and sole inventor of a certain new and useful improvement in Compositions for Making Duplicate Phonograph Records, fully described in the Letters Patent hereinafter mentioned, and which had not been known or used by others in this country before his invention or discovery thereof and which had not been patented or described in any printed publication in this or any foreign country before his invention or discovery thereof, or more than two years prior to his application for Letters Patent therefor hereinafter mentioned, and which had not been patented or caused to be patented by the said inventor or his legal representatives or assigns in a country foreign to the United States on an application filed more than twelve months prior to his said application for Letters Patent of the United States, and which had not been in public use or

BILL OF COMPLAINT.

on sale in the United States for more than two years prior to his said application, and which had not been abandoned.

2. That on or about the said 29th day of October, 1903, the said Jonas W. Aylesworth, by an instrument in writing bearing that date duly signed and delivered, and recorded in the United States Patent Office on the 5th day of November, 1903, did sell, assign and transfer to your orator, New Jersey Patent Company, its successors or assigns, the entire right, title and interest in and to the aforesaid invention and in and to any Letters Patent 10 of the United States which might be granted therefor, as by reference to said instrument, or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

3. That on the 3d day of November, 1903, the said Jonas W. Aylesworth being as aforesaid the original, first and sole inventor or discoverer of the said composition, made application in writing to the Commissioner of Patents of the United States for the grant of Letters Patent therefor, and paid into the Treasury of the United States the fees required by law and then and there fully and in all respects complied with all the necessary conditions and requirements of the statutes of the United States in such case made and provided. And thereupon, the examination having been made by the Commissioner of Patents as to the novelty and utility of the said invention as provided by law, the Commissioner of Patents caused to be issued to your orator, New Jersey Patent Company, Letters Patent in due form of law, under the seal of the Patent Office of the United States, signed by the Commissioner of Patents and bearing date the 14th day of February, 1905, and numbered 782,375; and that the said Letters Patent 30 did grant unto your orator and unto its successors and assigns sole right to make, use and vend the said invention throughout the United States and the territories thereof, as by reference to said Letters Patent or to a duly authenticated copy thereof, ready in Court to be produced, will more fully and at large appear.

4. That your orator is now the sole and exclusive owner of the said Letters Patent No. 782,375, and of all claims for infringement and violation thereof.

5. That the said invention is of great public utility and has been introduced into extensive public use by your orator and its 40 licensee, National Phonograph Company; and that your orator and its said licensee, have at all times stood ready and still stand ready and are able to supply all public demands for said invention.

BILL OF COMPLAINT.

6. That the defendant, well knowing the premises, and the rights secured to your orator as aforesaid, but contriving to injure your orator and to deprive your orator of the benefits and advantages which might and otherwise would accrue unto your orator from the said invention, after the grant of said Letters Patent No. 782,375 and before the commencement of this suit, as your orator is informed and believes and therefore avers, within the District of Jersey and elsewhere in the United States, without license or allowance and against the protest of your orator and in violation of his rights, did, unlawfully and wrong- 10 fully make, use and sell, and cause to be made, used and sold, and that it is now making, using and selling, and causing to be made, used and sold, in the City of Paterson, State of New Jersey, and in said District aforesaid, phonograph record compositions, employing, and continuing the invention set forth in said Letters Patent No. 782,375; that said defendant still continues so to do, and that it is threatening to continue the aforesaid unlawful acts to a large extent, all in defiance of the rights secured to your orator as aforesaid, and to its great irreparable loss and injury, and by which your orator has been, and still is being 20 deprived of great gains and profits which it might and otherwise would have obtained, but which have been received and enjoyed by the said defendant through its said unlawful acts and doings. And your orator further shows that it has caused notice to be given to said defendant of said infringement and of the rights of your orator in the premises and requested defendant to desist and refrain therefrom, but that said defendant disregarded said notice and refused to desist from said infringement and still continues to make, use and sell phonograph records embodying and containing said invention. And your orator further shows that as to the number of records employing or 30 containing or making use of said composition which have been by the defendant as aforesaid unlawfully made, used or sold, and as to the extent of the gains and profits received and enjoyed by said defendant from such unlawful making or using or selling, your orator is ignorant and prays a discovery thereof.

8. And your orator therefore prays as follows:

That the defendant may be required by a decree of this Honorable Court to account for and pay over to your orator such gains and profits as have accrued or arisen, or been earned or received by the said defendant by reason of the said unlawful 40 doings, and all such gains and profits as would have accrued to your orator but for the unlawful doings of said defendant, and all damages your orator has sustained thereby, and that

4 "BILL OF COMPLAINT.

the Court may assess said profits and damages and may increase the damages to a sum not exceeding three times the amount thereof.

That the defendant and its associates, officers, attorneys, servants, clerks, agents and workmen, may be perpetually enjoined and restrained by writ of injunction issued out of and under the seal of this Honorable Court, from directly or indirectly making or causing to be made, using or causing to be used, or selling or causing to be sold, any phonograph records embodying, employing or containing the invention and improvement set forth and claimed in the said Letters Patent numbered 782,375 or from infringing upon or violating the said Letters Patent in any way whatsoever.

That your Honors will grant unto your orator a preliminary injunction issuing out of and under the seal of this Honorable Court, enjoining and restraining the said defendant, and its associates, officers, attorneys, servants, clerks, agents and workmen, to the same purpose, tenor and effect as hereinbefore prayed for with regard to the said perpetual injunction.

That the said defendant may be decreed to pay the costs of this suit; and

That your orator may have such other further relief as the equity of the case may require.

To the end therefore, that the said defendant may, if it can, show why your orator should not have the relief prayed for, and may fill, true and direct answer make, but not under oath (answer under oath being herely expressly waived), according to the best and utmost of its knowledge, remembrance and belief, to the several matters hereinbefore averred and set forth, as fully and particularly as if the same were repeated paragraph by paragraph, and the said defendant specifically interrogated, may it please your Honors to grant unto your orator a writ of *subpoena ad respondendum*, issuing out of and under the seal of this Honorable Court, directed to the said defendant, COLUMBIA PHONOGRAPH COMPANY, GENERAL, commanding it to appear and make answer to this Bill of Complaint, and to perform and abide by such orders and decrees herein, as to this Court may seem just.

And your orator will over pray, etc.

NEW JERSEY PATENT COMPANY,

By JOHN F. RANDOLPH,

Secretary.

FRANK L. DYER,

Solicitor for Complainant.

FRANK L. DYER,

DELOS HOLDEN,

Of Counsel.

ANSWER.

5

STATE OF NEW JERSEY, }
County of Essex. } ss.

JOHN F. RANDOLPH, being duly sworn, deposes and says that he is the Secretary of New Jersey Patent Company, the complainant named in the foregoing Bill of Complaint; that he has read the same and knows the contents thereof to be true except as to those matters stated to be alleged on information and belief, and as to those matters he believes it to be true; that the reason why his verification is not made by the complainant personally is because it is a corporation.

JOHN F. RANDOLPH.

Subscribed and sworn to before me this 1st day of April, 1905.

FRANK L. DYER,

[i. s.]

Notary Public, State of New Jersey,
Commission Expires February, 1906.

In the Circuit Court of the United States, District of New Jersey.

NEW JERSEY PATENT COMPANY,

Complainant, }
vs. } In Equity No.
COLUMBIA PHONOGRAPH CO., GENERAL, } Suit on Patent
Defendant. } No. 782,375.

Answer to Bill of Complaint.

(Filed June 5, 1905.)

The defendant, the Columbia Phonograph Co., General, answering to the bill of complaint herein, or to so much thereof as it is advised is material and proper to be answered unto, answering says: That it, the defendant, is a West Virginia corporation and has a place of business at Paterson, New Jersey, and that it believes the complainant to be a New Jersey corporation, as alleged in said bill of complaint.

And further answering, said defendant says:

I.

Defendant denies each and every allegation of paragraph numbered 1 in said bill of complaint.

United States Circuit Court, District of New Jersey.

NEW JERSEY PATENT COMPANY
 vs.
 COLUMBIA PHONOGRAPH COMPANY,
 GENERAL. In Equity No. 12,
 On Letters Patent No.
 782,375

Complainant's Rebuttal Proofs.

(Filed March 18, 1907.)

10 Testimony in rebuttal for complainant, taken before HENRY D. OLIPHANT, a Standing Examiner of this Court at the office of FRANK L. DYER, Esq., West Orange, N. J., commencing February 19th, 1907.

Present—FRANK L. DYER, Esq., for Complainant, C. A. L. MASSIE, Esq., for Defendant.

20 JONAS W. AYLSWORTH, a witness called on behalf of complainant, having been first duly sworn, deposes and says as follows:

DIRECT EXAMINATION, by Mr. DYER:

Q. 1. You have already testified in this case, I believe?

A. Yes sir.

30 Q. 2. In your patent in suit from line 41 page 1, to line 5, page 2, you point out certain peculiarities which you state that a composition adapted particularly for making molded records should have. Regarding these alleged peculiarities, is it to be understood that at the date of your invention they were all new characteristics of a phonograph composition?

40 A. The statement in the patent of the peculiarities which an ideal molded record composition should possess was prepared by me and was embodied in the specification in almost my exact language. I sought there to point out the peculiar properties which should be possessed by the composition to fit it most perfectly for the molding process and to give to the resulting molded records desirable physical characteristics. The statement was prepared without any particular reference to the novelty of the individual peculiarities of the composition, because the composition is to be regarded as a complete accomplishment. It would be a very simple matter in this art to realize one, or perhaps a number of these ideal conditions; for instance, as to hardness, limpidity, and freedom from decomposition products, but the difficult prob-

lem was to produce a composition in which substantially all of the characteristics were realized in one and the same composition.

Q. 3. Have you read the depositions of Messrs. Macdonald and Thornberry, taken on behalf of defendant herein?

A. I have.

Q. 4. It seems to be the opinion of Messrs. Macdonald and Thornberry that with the exception of the fact that with your composition, or a composition embodying your invention, the material is somewhat harder than the blank composition used before your invention, all the other peculiarities or characteristics pointed out by you as defining an ideal molded record composition are realized in the use of the old blank composition. I will, therefore, take up *seriatim* the statements of the patent, in which these peculiarities of an ideal molded record composition are set forth, in order that the Court may have the benefit of your views thereon. The patent states (p. 1, lines 40-45) that:

"In the first place the composition should be very limpid when in a molten or plastic state so as to flow into intimate engagement or contact with the record surface and thereby permit a very sharp impression to be received."
 Messrs. Macdonald and Thornberry (in answer to Q. 22 and Q. 11 respectively) testify that in respect to limpidity, they perceived no difference between a composition employing no carnauba wax, and a composition employing "a substantial amount of carnauba wax." What, if anything, have you to say as to their views on this point?

50 A. I observe in the first place that both Mr. Macdonald and Mr. Thornberry attempted to compare the limpidity of the two compositions by a mere inspection or eye test. Limpidity is a molecular condition, and the eye test would be a very crude and uncertain way of making a comparison on this point, unless the variations were very discernible. Of course, one might observe by inspection that gasoline was more limpid than molasses, but it would be impossible to tell by the eye that gasoline, for example, was more limpid than water. It is of course evident that if we are dealing with a very viscous material, it will not take as sharp an impression of a fine record as a more limpid material; hence, the greater the limpidity the more perfect the impression will be that is received from the mold. When carnauba wax is molten, it is as thin and limpid as water, whereas, many of the other ingredients are more viscid. The addition of an appreciable percentage of such a very limpid material to a

composition could have no other effect than to increase its limpidity. Not only would this follow as a necessary conclusion, but I have made tests to determine the comparative limpidity of the two compositions. In making these tests, I floated on the two compositions, maintained at the same temperatures, a metallic funnel having a small opening in the bottom and ascertained the time required for the funnel to fill and sink. I was surprised to see how very close the readings were in making these tests, and I determined that the composition employing carnauba wax was about 10% more limpid than the blank composition in which carnauba is not used.

Q. 5. The patent in suit (p. 1, lines 46-50) states:

"It should be free of decomposition products, which would otherwise result in the generation of gas, forming bubbles, which would destroy the commercial character of the record surface."

Messrs. Macdonald and Thornberry state that this characteristic is true of the blank composition as well as of a molded record composition employing a substantial quantity of carnauba wax.

20 Do you agree with them in this matter?

A. I agree with them. It is necessary that any composition from which records are made, whether by directly recording on a blank cylinder or by molding, should be free of decomposition products which might result in gas bubbles. This is even more true of a blank composition than of a molded record composition, because with a molded record composition gas bubbles might exist below the surface without doing harm, whereas, with a blank composition if bubbles existed below the surface, they might be disclosed during the shaving of the blank or during the formation of the record. This freedom from decomposition products is not a new characteristic of my improved composition. It is 30 and has been a desirable and necessary characteristic in a blank composition; but in making a satisfactory molded record composition the problem to be solved was to produce a composition in which this desirable property of the blank composition would be retained. In other words, viewing my improved composition as consisting of the old blank composition modified by the addition of a new ingredient added in a new way to produce new results, the problem was to so modify the blank composition that while obtaining new results necessary in the molded record art, 40 I should still retain the desirable characteristics which the blank composition itself possesses.

Q. 6. The patent in suit p. 1, lines 50-52) states:

"It should be of excessively fine texture or grain, so as not to produce extraneous sounds when the reproducer runs over it."

On this point, Messrs. Macdonald and Thornberry testify that from their observations, there is no difference between the blank composition and a composition employing a substantial amount of carnauba wax, as described in the patent in suit. Do you agree with them?

A. I do. I do not claim that the smoothness of record surface is a new characteristic of my improved composition. It was not necessary to improve the record surface, because the surface of the ordinary blank composition is very smooth. The problem was to produce a composition which, while it should have the desirable properties necessary in the molded record art, should retain the smooth surface of the blank composition. Many ingredients might be used which would add hardness to the composition and make the resulting records more durable, but it was a difficult matter to strike the exact composition that should have all the additional properties that are important in the molded record art, while still retaining the desirable properties that were known in the manufacture of compositions for phonograph blanks. Mr. Edison has given a good deal of thought to molded record compositions, and before my invention, suggested the possibility of using as ingredients for hardening materials, relatively gritty substances like chalk or fine precipitates. While the addition of these materials would harden the composition, they would make the surface rough.

Q. 7. The patent in suit (p. 1, lines 52-55) states:

"It should be very hard when set, so as to reduce wear as much as possible, due to the tracking of the reproducer."

Messrs. Macdonald and Thornberry both admit that when even a relatively small percentage of carnauba wax is used, the wearing qualities of the records are very perceptibly increased. I suppose you agree with them on this point?

A. Yes, I do. Mr. Macdonald, however, is not, I think quite right in his explanation of the cause for the increased durability. As I understand his testimony, he believes that when carnauba wax is introduced at a high temperature it merely makes the composition harder and therefore more durable. My experiments have shown me that durability of the record surface is due more to the toughness of the material rather than to its hardness. I found that when the carnauba is added at a low temperature it

makes the composition considerably harder than when added at a high temperature. This is stated in the patent page 2, lines 101-107. When the carnauba is added at a high temperature, chemical reactions take place, which toughen the composition and increase its durability.

Q. 8. The patent (p. 1, lines 55-65) states:

"It should have the capacity of passing from the liquid to the solid state through an intermediate condition of gradually-reduced plasticity, to thereby enable the duplicate to shrink internally and toward the surface, so as not to clear the mold until quite hard, to thereby preserve the record, instead of chilling very rapidly at the surface to form a relatively hard film, which tends to shrink away from the mold even when the mass of the material is still molten, since I find that materials having this latter characteristic are not suitable for the purpose, owing to the danger of the record-surface being injured under the effect of the unequal chilling."

20 Messrs. Macdonald and Thornberry as to this point, state that they observed no difference between the composition employing a very substantial amount of carnauba and the ordinary blank composition. Do you agree with them?

A. Yes, I think they are correct. The particular phenomena which takes place during the setting and contraction of my improved composition, except possibly in degree, are those which attend the setting and contraction of the blank composition.

Q. 9. Are you familiar with the art of making phonograph blanks as well as the art of making molded records?

30 A. Yes. I have been in close touch with both arts since their inception. Phonograph blanks, exactly as they are now made, have been so manufactured for more than ten years and their composition has been used since 1888 or 1889. I have frequently witnessed the manufacture of phonograph blanks, and have been often consulted as an expert where difficulties have been met with.

Q. 10. Having reference to these phenomena attending the setting and shrinkage of your improved composition, as well as the prior blank composition, are they of equal importance in 40 the two arts, namely, in the manufacture of molded records and in the manufacture of phonograph blanks?

A. No, I do not consider that they are of equal importance. In the manufacture of molded records, it is absolutely necessary that

the material should set and become hard while in contact with the mold, so that the record will retain its form in the minutest detail and that *then* the material should shrink away from the mold, so as to permit the removal of the record. But, in the manufacture of blanks it is quite unimportant whether the material shrinks away from the mold or not, before it is entirely hard, because in the manufacture of blanks it is always the practice to shave them off before they are used. As a matter of fact, in blank manufacture, the blanks are forcibly pulled out of the molds while they are hot and still sticky and a very rough surface results. The difference between the molded record art and the blank art is that with the former the surface must be entirely finished while in the mold, whereas, with the latter, the surface is always finished by shaving after removal from the mold. Therefore, these phenomena regarding setting and shrinking are absolutely necessary in the molded record art, whereas so far as the blank art is concerned, the ideal composition would be one which, after it had set, would shrink away from the mold while its surface was still more or less soft and plastic, in order that the operations might be performed with greater rapidity. In other 20 words, in the blank art, the particular phenomena under consideration make it necessary to forcibly remove the blank from the mold in order to save time in manufacture.

Q. 11. Do you agree with Messrs. Macdonald and Thornberry that the two compositions are the same in respect to the statement in the patent in suit (p. 1, lines 69-71) that:

"It should not be sticky or tenacious so as to adhere to the mold when set, even to the smallest extent."

A. No, I do not agree with them. In this respect the peculiar property of the carnauba composition is that it stays in contact with the mold for a considerable longer time than the blank composition, so that when the material leaves the mold, its temperature is considerably lower than is the case with the blank composition. Since its temperature is lower, the record surface is harder, so that there is less danger of the material sticking to the mold than with the blank composition. Furthermore, since the carnauba composition is perceptibly tougher than the blank composition, it is enabled to detach itself freely from the mold with less danger of any part of the surface being torn off. I have made many thousand experiments with the blank composition and with 40 the carnauba composition and I have satisfied myself that in this respect the carnauba composition is decidedly superior to the blank composition. Of course, it is possible by exercising great

care to obtain reasonably satisfactory results with the blank composition, so far as this particular point is concerned, but under the conditions of commercial manufacture the percentage of discards with the blank composition due to sticking to the molds would be considerably greater than with the carnauba composition operated under the same conditions.

Q. 12. Have you made any experiments recently with the blank composition and with the carnauba composition to determine the correctness of the view expressed in your last answer?

A. I have. I had made under my direct supervision and observation about one hundred records from each of several compositions, including the ordinary blank composition and that of the patent in suit, as well as a composition employing the percentage of carnauba wax used by defendant, and also the patented composition foamed off at a low temperature so as to avoid chemical reaction. All of these records were made under exactly the same conditions of operation and temperature as nearly as it was possible to observe.

Q. 13. Please refer now to the point referred to in Q. 11, in reference to the relative stickiness or tenacity of the patented composition as compared to the ordinary blank composition and state whether your experiments indicated any superiority of the patented composition in this respect?

A. They did show the superiority of the patented composition in this respect over the blank composition. All of the records molded from the blank composition had a more or less dull surface which was especially noticeable on the thick end of the record, which is the end which shrinks loose from the mold first, as a rule. It was necessary for the records to be burnished with cotton a great deal longer to make them of a uniform glossy appearance than is necessary with the patented composition, which in most cases requires no burnishing at all, but the record is completed in the mold with a smooth and brilliant surface. The effect of this dull surface makes the reproduction sound somewhat rougher and less perfect than it does with the patented composition. This foggyness of the record made of the blank composition results in leaving the mold dirty, since a small part of the record surface is left on the mold, which necessitates more frequent cleaning than when the patented composition is used.

Q. 14. In the present development of the molded record art, would you consider a composition to be successful that resulted in the presence of a more or less foggy surface on the records and necessitated frequent cleaning of the molds, to which you have just referred?

A. I would not. Of course, it might be possible by frequent cleaning of the molds to minimize the effect and by burnishing the molded records to make them so that the foggyness would not be noticed so far as the eye is concerned, yet, those records which had such defects would not be perfect as compared with those made with the patented composition, so far as reproduction to the ear is concerned.

Q. 15. Are you able to state whether this cloudy appearance due to the sticking of the blank composition to the mold in manufacture was developed only on a small percentage of the records, or on a considerable part of them?

A. It was developed on nearly all of them, or in fact as far as I observed, on all of them. I did not pick up each record and examine it in this respect, but in looking over them as they stood on the trays, they all seemed to have the foggy effect.

Q. 16. And was this foggy effect present on the records made of the patented composition?

A. Only in a very few instances.

Q. 17. Was it present in the composition made in which the same percentage of carnauba was used as defendant employs?

A. Not in any greater degree than the patented composition.

Q. 18. And what about the composition where carnauba was used in an uncombined state?

A. I do not remember of noticing the effect in particular in this composition. This effect when it occurs on a dark composition like that of the patent, is very much more conspicuous than it is on a lighter colored composition like the blank composition or the composition containing carnauba, which was not heated to a high temperature. The effect to be noticeable at all in a light composition must be relatively great, and in the case of the blank composition it was very apparent and was difficult to remove even when the burnishing was carried to the extent of injuring the surface.

Q. 19. The patent (p. 1, lines 71-74) states:

"It should be capable of shrinking away from the mold when quite hard by a reduction in its temperature."

Messrs. Macdonald and Thorberry state that so far as they could determine by an eye test, there was no difference in this respect between the carnauba composition of your patent and the blank composition. Do you agree with them?

A. Substantially yes, although as I have just pointed out, with the blank composition the material leaves the mold when the record is at a higher temperature than with the patented com-

position, so that there is always danger of the material adhering to the mold and producing a foggy surface. If the expression "quite hard" means that the composition should be hard enough as to overcome this difficulty, then I would not agree with Messrs. Macdonald and Thornberry that the two compositions are the same, because as I have pointed out, one results in records having foggy or cloudy surfaces, or in which such surfaces are likely to occur, and the other does not.

Q. 20. The patent states (p. 1, lines 74-76) that:

"It should have a very smooth and polished surface so as to eliminate foreign noises, due to the tracking of the reproducer."

As a result of your experiments, did you observe any difference in this respect between the patented composition and the blank composition?

A. There was a difference, as I have already said. With the records made of the patented composition, the surface upon leaving the mold was highly polished and brilliant, whereas, with the blank composition, the surface was more or less cloudy and foggy, and required burnishing to give the polished effect. If the attempt is made to use the latter records without burnishing them, they would be very rough. The burnishing merely improves the appearance to the eye, but the reproduction is still objectionable and full of foreign noises.

Q. 21. The patent (p. 1, lines 77-80) states:

"It should be free from air and gas bubbles, which if present at the surface would destroy the commercial character of any duplicates containing them."

Do you agree with Messrs. Macdonald and Thornberry as to the substantial identity of the two compositions, so far as this characteristic is concerned?

A. Yes, each composition was equally free of gas bubbles and products of decomposition.

Q. 22. The patent in suit (p. 1, lines 80-82) states:

"It should shrink uniformly without warping, so as to be capable of effective use with standard talking-machines."

Do you agree with Messrs. Macdonald and Thornberry as to the identity of the two compositions in respect to this characteristic?

A. No, from the blank composition a great many records had to be discarded on account of warping, which made the records out of round and unsuitable for use on the phonograph. The presence of carnauba wax in the composition has the very valuable

property of producing substantially uniform shrinkage and of materially reducing any tendency to warping.

Q. 23. Is this property of the patented composition of equal importance in the two arts of making molded records and making phonograph blanks?

A. No, it is not. In making phonograph blanks, the blanks are allowed to season for a time before they are finished either on the inside or the outside, so that it becomes possible to make them perfectly concentric and they can be thus fitted for use with the phonograph. But with molded records, they cannot be thus seasoned, and finally finished, but have to be completely finished while in the mold, so that no further operations can be performed on them in the way of truing them up or making them concentric. A molded record must have the capacity of shrinking uniformly, which is not important in the manufacture of blanks, nor is it realized in the blank composition. The experiments which I have made show that the blank composition shrinks irregularly and a large percentage of the records had to be discarded because they are not sufficiently concentric for use.

Q. 24. Are you familiar with the molded records that were first manufactured and sold by defendants as molded records shortly after the Edison records were first put on the market?

A. I saw a number of these records shortly after the Edison records were put on the market which were marked "Columbia" records.

Q. 25. I show you a record and ask if you can identify it as one of the early Columbia molded records?

A. Yes, that is exactly the appearance of the records that I saw, to which I have referred.

Q. 26. Can you tell from the appearance of that record whether it was finished completely in the mold?

A. This record has not been finished completely in the mold. It has been cut or reamed after the material was cold, which is seen by the smooth burnished surface on the top of the ribs on the interior of the record. The record appears to be somewhat oval, as is seen by the ribs being more completely cut away on one side than on the opposite side. This effect is very characteristic of the blank composition and was experienced in the experiments which I made. It, however, was overcome in a measure by placing them on cores before they had entirely cooled, but even with this precaution the effects were still noticed in the results.

The record referred to by the witness is offered in evidence and marked "Complainant's Exhibit Early Columbia Molded Record."

It is admitted by Counsel for defendant that the exhibit just introduced is one of the first type of molded records that were put out by defendant and sold as such on or about March 1, 1902.

Q. 27. Are you familiar with the fact that after the defendant had been marketing molded records similar to the exhibit you have just introduced, for a year or more, it changed the character of its product by doing away with the spiral rib on the interior and using concentric ribs and by making the records much darker than before?

A. I am. I noticed a number of Columbia records in which these changes were made that are referred to in the question.

Q. 28. I show you a molded record and ask if you can identify it.

A. I recognize this as one of the defendant's records of the same type that they are now marketing, except as to the label. When they first put out these records, the records were not labeled as at present.

The exhibit referred to by the witness is offered in evidence and marked "Complainant's Exhibit, Present Columbia Record."

Q. 29. Does this record indicate any superiority as to uniformity of shrinkage from the first record considered?

A. Yes, this record is much more perfect in that respect, but this would be expected, since I infer that it is made of the same composition that the defendant now uses, employing carnauba.

It is admitted by counsel for defendant that the record last referred to by the witness is identical with the records marketed by defendant, after the change in its present composition.

Q. 30. Referring again to the patent in suit, it states (p. 1, lines 83-86) that:

"It should not be affected by moisture, so as to be preserved in damp climates, and it should have a high melting-point, so as not to soften in hot localities."

Messrs. Macdonald and Thornberry have expressed the view that as to this point the carnauba composition of the patent is identical with the blank composition. Is this so?

A. Not entirely. As regards being affected by moist air in a hot damp climate so as to roughen the surface, the composition

containing carnauba is rather superior to the blank composition. Tests which we have repeatedly made to determine this point have always shown the carnauba composition to be superior to the blank composition. Records were put in a box which was maintained at a uniform temperature of 120° F. and in the box was placed a vessel containing water which saturated the atmosphere in the box. Then the time it took to develop a roughness on the surface was noted. The difference as I remember it was very marked under these conditions. Furthermore, when we were making the mechanically duplicated records on the blank composition, many complaints came in from various parts of the country and many records were returned owing to the surface becoming damaged by moisture and mildew, the mildew effect being such as is produced on leather in damp dark cellars. Although there have been many million records made of the patented composition, I do not recall a single instance of this mildew effect taking place or of any records being returned on account of this defect.

Q. 31. To what do you attribute the superiority of the carnauba composition in this respect?

A. Probably to some antiseptic quality which is imparted to the composition by reason of the carnauba or possibly the lamp black.

Q. 32. Referring again, to the fact that the composition should not be affected by moisture, what ingredient in the composition is relied upon to produce this effect?

A. The hydrocarbon ingredient (i. e. the ceresin) and the carnauba wax ingredient.

Q. 33. When carnauba wax is used, is it possible to employ a smaller percentage of the hydrocarbon ingredient to get the same anti-hygroscopic effect?

A. It is, but the records become rather more brittle so that it is necessary to add sufficient quantity of the hydrocarbon material not only to assist in the prevention of the moisture effect, but also to soften or temper the composition.

Q. 34. The patent states (p. 1, lines 86-90) that:

"When hot, it should be capable of being cleanly cut in remaining without dragging or chipping, so as to present a smooth clean surface on the bore of the duplicate.

Do you agree with Messrs. Macdonald and Thornberry that in this respect, the carnauba composition is the same as the blank composition? A. Yes, essentially the same.

Q. 32. Is this quality of the same importance in the molded record art as in the blank art?

A. It is of no importance in the blank art, because in the manufacture of phonograph blanks, the latter are all reannealed on their interior after the material is annealed and is entirely cold. Therefore, it is immaterial in the blank art whether the material cuts smoothly while hot, or not. In the manufacture of molded records, however, it is highly important that the material should cut smoothly while hot, because they have to be finished or substantially finished while still in the mold, and they stay in the mold only when they are in a heated condition. This peculiarity illustrates one of the problems met in making a successful molded record composition. It was necessary to make a composition which, while having the new properties necessary for the molded record art, should still retain the desirable property possessed by the blank composition, but not utilized in the blank art.

Q. 35. The patent (p. 1, lines 99-102) says:

"Preferably it should be of a very dark color to permit imperfections to be better observed."

20 What is the practical commercial value of this feature in the molded record art?

A. It enables the imperfections of molding to be more readily discovered, and that by simple eye tests, than is the case where records are of light color. It furthermore gives them a uniformity which is commercially desirable, since the trade prefers a uniform dark colored record. They might get a dark record one time and a very light on another time, if the composition were not made uniformly dark. As it is not possible to make them uniformly light without great waste of material, due to the discarding for scrap, the way to obviate this difficulty is to make them uniformly dark, which, as stated, possesses the additional advantage of permitting them to be more perfectly inspected.

30 Q. 37. Finally, the patent (p. 1, line 92, p. 2, line 105) states:

"It should be perfectly amorphous and non-crystalline, since the latter materials harden very quickly at the surface when their congealing temperature is reached and shrink irregularly, with the objections pointed out."

40 Do you agree with Messrs. Macdonald and Thornberry that as to this feature, the patented carnauba composition is the same as the blank composition?

A. Essentially the same. But, here again, the problem was to produce a molded record composition which, while possessing the new features necessary in that art, should retain the desirable properties of the old material.

Q. 38. The position of defendant in this case seems to be that the composition of your patent consists simply in taking the old blank composition and adding carnauba wax to it for the purpose of hardening the mixture, and that since carnauba was a known ingredient in connection with waxes such as ozokerite and bees' wax for the manufacture of record materials, no invention would be required on your part to produce the patented composition. Do you agree with this conclusion? In answering you might explain the direction of your experiments and investigations which led to the production of the patented composition.

A. When I started experimenting on making molded records over five years ago, I first attempted to make the records of the blank composition, but these attempts were not successful at that time. It was apparent that the molded record composition should be considerably harder and more durable than the blank composition, and also, that we would have to pay no attention to the property of the blank composition so far as its peculiar fitness for receiving the record impression by cutting was concerned. The duplicate records as formerly made by mechanical means, were limited to a material which could be readily cut, and consequently, such records were more easily worn on reproduction than are the records as made today from the patented composition. My experiments were then directed toward producing a harder and more durable material and which at the same time would not have the objections which I encountered with the blank composition in attempting to mold it. I recall that the composition which we called "hard regular" was tried, that is, the blank composition omitting the cerein, which is very much harder than the blank composition with cerein, but this material could not be satisfactorily molded as it was very irregular in shrinkage, and shrank loose from the mold before the record could be finished. Various materials were then mixed with the "hard regular" to try and overcome this difficulty in the matter of shrinkage without much success being attained. Among the materials experimented with, were asphalt, various varnish gums, rosin, shellac, carnauba wax and Florida clay mixed with the "hard regular," with and without cerein, but none of these materials at first produced satisfactory results. In many cases, they did not satisfactorily mix with the hard regular wax, and in other cases where they did mix, the shrinkage and molding properties were not favorable. I remember to have used carnauba wax in these experiments but it was not until the composition was raised to employing carnauba and in which the temperature had been raised to

a very high degree that a successful result was obtained. I realize that in the refinements of the art as practiced to-day, many compositions can perhaps be successfully molded, but at that time the one composition that stood out alone as being the only one which we could consider sufficiently perfect to go ahead with in manufacture was the composition of the patent in suit. During this work I made several hundred experiments trying all sorts of combinations and was engaged several months in the search, the result of which was that my investigations were narrowed down to the composition of the patent in suit. That was the only composition that seemed to meet all the desirable peculiarities necessary in the new art, both as to its molding properties and as to its properties in the final records themselves. As to the position of defendants, I can only say that the composition of the patent in suit, or the possibility of using carnauba wax in connection with a metallic soap mixture, was not obvious to me. I had no way of knowing that carnauba wax would properly mix with the metallic soap composition. I could not tell whether the carnauba would add desirable properties to the metallic soap composition without destroying its good properties already possessed by it. As a matter of fact, I had been perfectly familiar with the properties of carnauba for more than ten years, and if I would have taken anything for granted it would be that carnauba was quite unsuitable for the purpose. The making of the patented composition was effected only after many experiments were made.

Q. 39. The position of defendant seems to be that anyone seeking to make a hard composition or to harden a known composition would naturally turn to carnauba wax as the proper ingredient to be used. In the companion suits, Numbers 10 and 11, based on the Macdonald patents, your note books have been introduced, illustrating your work in connection with the production of phonograph compositions from 1888 to 1895. Kindly refer to these note books and state what materials you were familiar with as a result of these experiments that you might have used is the only problem to be solved was the hardening of the blank composition?

A. In the experiments referred to, I had occasion to test practically all known materials, many thousand in number, which might be used in the art, and among the materials with which I was familiar at the date of the experiments, which resulted in the patented composition and which might have been used as hardening ingredients, are the following:

Shellac,
Myrtle wax,
Naphtholine,
Carnauba wax,
Asphaltum,
Kauri gum,
Gum Dammar,
Syrin asphalt,
Hard Mexican asphalt,
Sulphur,
Ceresin residue,
Paraffin residue,
Lead palmitate,
Lead stearate,
Iron stearate,
Kaolin,
Aluminum stearate.

Q. 40. Would any of these hardening ingredients except carnauba be suitable for use in the molded record art?

A. Not as practiced to-day; what the future may bring forth I do not know.

Q. 41. Then of this list of hardening ingredients, the only one that possesses all of the properties necessary for making a successful molded record composition is carnauba wax?

A. That is correct. The recollection of my early experience with molding compositions was that carnauba wax, in fact, was not very favorable, and it was quite by accident that the carnauba composition was tried at all. I remembered that it was difficult to mold even a blank from compositions which contained much carnauba as it had such a shrinking effect as to make it very difficult to cast the blanks successfully. Knowing this effect of shrinkage which carnauba possessed, it was not considered by me a very promising experiment when I first tried it, and I recall that carnauba was used in a number of experiments which were not very successful. This I attribute to the fact that with these experiments the materials were probably not heated sufficiently to produce the reactions. In making preliminary experiments of this kind, I seldom used the thermometer, excepting when making up a large amount, but I usually judged the temperature more by the eye than by the thermometer and could easily have made compositions with carnauba and not heated them a sufficient time to produce the reactions, and consequently in that way may have lost its valuable properties.

Q. 42. On that very point, the position of defendant seems to be that since the composition is foamed off with the carnauba at the same temperature that was maintained before the carnauba was added, the obvious thing for any one to do would be to keep up the temperature during the addition of carnauba. What, if anything, can you say on this point, as a result of your experiments?

A. I do not consider that it would be obvious to keep up the temperature to the point at which the original blank composition was foamed off, because as a matter of fact in making experiments in which the blank composition is used, some regular stock blank composition is usually melted and requires no foaming off, and if mixtures are to be made they may be made as soon as the wax is melted sufficiently for them to mix. On the contrary, the average experimenter would be careful not to overheat such a mixture, especially if he saw that if he did a reaction was going on which might convey to him the impression that the materials were decomposing. And these reactions do go on for a considerable period of time, generally from one to five hours, and unless a person knew in advance that these reactions were used to produce some change in the material that would be favorable, he would, I believe not use a high temperature, and if he did use a high temperature, and observed that decomposition was taking place, I believe he would reduce the heat or possibly start over again under the belief that he had spoiled the experiment. As a matter of fact, although I have made a great number of experiments in this art, the expedient of heating the composition to a high temperature and maintaining it at a high temperature until all reactions had ceased, was the result of an accident, due to the fact that I left a batch of the composition in a heated condition and during my absence the temperature increased so that when I returned the reactions had taken place. When I examined this accidentally-made composition, I found that I had discovered the exact material that I had been looking for.

Q. 43. Please examine the patents which have been granted in this art, and point out the materials mentioned therein as suitable for the manufacture of phonograph records, indicating specifically any materials or combination of materials that may have been suggested prior to your patent for the manufacture of molded records?

A. I have examined the several patents granted in this art up to the date of the application for the patent in suit, and find that they disclose the following ingredients or compositions for use in the manufacture of phonograph record tablets:

Tinfol and paper are referred to in Edison patent No. 200,251 of February 19th, 1878;

Steel and other metals referred to in patent to Reynolds, No. 287,166 of October 23, 1883;

A mixture of bees' wax and paraffine is referred to in the patent to Bell & Tainter, No. 341,214 of May 4th, 1886;

Iron is referred to in the patent to Tainter, No. 341,287 of May 4th, 1886;

Paper parchment and metal are referred to in patent to Berliner No. 372,786 of November 8th, 1887;

Boiled tar, pitch, resin, asphalt and dental wax are referred to in the patent to Herrington, No. 392,953 of November 13th, 1888;

A mixture of carnauba and bees' wax or ceresin wax, of paraffine, or bay-wax is referred to in patent to Tainter No. 393,190 of November 20, 1888;

Metallic soaps are referred to in patent to Edison No. 393,668 of December 4th, 1888;

Celluloid, glue, wax, molasses, pitch and asphalt, or two or more of such materials in combination, and particularly a mixture of celluloid, molasses and bees' wax are referred to in patent to Herrington No. 397,856 of February 12th, 1889;

Wax, resin, pitch, celluloid, glue and rubber are referred to in patents to Herrington, No. 399,264 of March 12th, 1889, and No. 399,265 of March 12th, 1889;

A mixture of stearic acid and ceresin is referred to in patent to Edison No. 400,648 of April 2d, 1889. In this patent the stearic acid is referred to as a "desirable hardening material";

Metallic soaps are referred to in patent to Edison No. 400,649 of April 2d, 1889. The patent also refers to the use of a wax or a combination of waxes.

A mixture of oleate of lead and palmitate of magnesium is referred to in patent to Edison No. 400,650 of April 2d, 1889.

A hard metallic soap is referred to in patent to Edison No. 406,570 of July 9th, 1889;

Hard metallic soaps are referred to in patent to Edison No. 406,571 of July 9th, 1889. This patent states that the surface may be softened by applying to the same a weak alkaline solution or even moistening the same with water. I recall the experiments mentioned in this patent very well, the idea being to make it possible to remove a continuous shaving. The special surface treatment seemed to make the material slightly cohesive, but it did not toughen it in the sense that I use the word in my patent,

i. e., having the capacity to resist wear. The patent also refers to the production of "rough filins upon the surface of the blanks" by applying to the same gum balata dissolved in bisulphid of carbon, or gum cotton dissolved in amyli acetate, or glue, dissolved in water;

Stearate of soda as a suitable material for the surface coating of a composite blank is disclosed in Edison patent No. 406,525 of July 9th, 1889. The patent describes an inner or body layer formed of natural asphalt, asphalt pitch and hard coal tar pitch. To permit the latter to shrink out of the molds into which it is poured, the patent suggests the addition of 3 to 6 per cent. of carnauba wax, that is referred to as a material which in cooling shrinks or contracts greatly. Finally, the patent suggests that in order that the asphalt may be made limpid enough so as to pour readily into the molds, it may be admixed with a small quantity of Japan wax or ozokerite or with crude petroleum, turpentine, melted resin, or tar;

A composition of stearate of soda and oleate of alumina for the outer or surface coating of a phonograph blank, and an inner or body coating of hard rubber or chamois, are disclosed in patent No. 414,750 of November 12th, 1889;

Ozokerite is referred to as the outer or surface coating of a composite record in the patent to Tainter No. 421,450 of February 18th, 1890, the inner layer or support being a paper tube. The patentee suggests the possibility of mixing the ozokerite with "bees' wax, carnauba wax and others." It further says:

"In forming a tablet with ozokerite wax it is advantageous to concentrate the crude wax by the application of heat until it loses from ten to thirty per cent. of its weight, which renders it much more suitable for the purposes of the invention. After concentration by boiling it becomes harder and tougher, changing in color from a brownish black to a deep black. It is then applied in a thin layer or coating to the foundation of paper or other material, and on cooling is turned down until a perfectly smooth surface is obtained."

In heating the ozokerite wax a high temperature is necessary, in order to produce the concentration desired. At 250° Fahrenheit the vaporization proceeds very slowly, and it is customary to employ a temperature of 400° Fahrenheit and upward. The duration of the treatment will, of course, depend on the temperature employed."

As is well known, ozokerite is impure or unrefined ceresin. This is always contaminated with a considerable proportion of volatile constituents, which make it soft and under the effect of heat, these volatile constituents are driven off, so that the material more closely resembles ceresin. Ceresin is harder and tougher than ozokerite, even when the latter is concentrated as described in this patent. Continued heating of ceresin does not increase its toughness, because there are no more volatile constituents to be driven off, but such treatment actually makes the material softer, since it tends to split up the hydrocarbons of which it is formed.

Metallic oleates and stearates, such as oleates and stearates of lead, magnesium and aluminum, are described in Edison patent No. 430,272 of June 17th, 1890. The patent states that these metallic soaps "may be employed alone, or mixed with other materials, such as waxes, resins, or gums."

Plaster-of-Paris, sealing wax, a mixture of shellac and sand, or shellac and sawdust, and asphalt, are suggested as materials from which to form the base or support of a composite record in Edison patent No. 430,570 of June 17th, 1890;

A mixture of gutta percha and resin is to be applied to a foundation tube of muslin or paper is suggested in patent to Haysinger, No. 440,155 of November 11th, 1890. The same composition is described in patent to Haysinger No. 450,338 of September 29th, 1891, which in addition refers to hardening the mixture by the employment of more or less starch, or by a solution of chloride of zinc. The patent also suggests a mixture of gutta percha and a resin soap. It also suggests that linseed oil may be used as one of the ingredients, and that caoutchouc may be substituted for the gutta percha.

Boiled tar, pitch, resin, asphalt, and dental wax are suggested in patent to Ferrington, No. 464,470 of December 1, 1891.

Wax, resin, and Plaster-of-Paris are suggested in patent to Edison No. 484,582 of October 18th, 1892. This is the first patent that refers specifically to the casting of moulded records, but obviously the materials suggested are unsuited for the practice of the art at the present time.

A mixture of asphalt and Japan wax is suggested in the patent to Edison No. 488,191 of December 20th, 1892.

Ozokerite was applied to a foundation of paper is suggested in patent to Wassonich, No. 505,010 of October 3d, 1893.

Celluloid is suggested in the patent to Liores, No. 538,273 of October 30th, 1894. This patent describes a duplicating process in which a heated blank is expanded outwardly into contact with

the mold, instead of being cast therein, as in the modern molded record art.

Hard rubber and celluloid are suggested in patent to Berliner, No. 548,662 of October 29th, 1895.

Sealing wax is suggested in patent to Berliner, No. 564,586 of July 28th, 1896.

The ordinary blank composition consisting of a mixture of stearic acid, stearate of soda, stearate of aluminum and ceresin, is suggested in patent to Macdonald No. 666,725 of July 5th, 1898. This blank composition was the development of my experimental work largely under Mr. Edison's direction in 1888 and 1889, and was put on the market in this country by the Edison Manufacturing Company and the Edison Phonograph Works as early as 1889, or more than seven years before the application for this patent was filed. Since 1889 all phonograph blanks have been made of this composition.

Cellulose and vulcanized rubber are disclosed in the patent to Lambert No. 645,920 of March 20th, 1900.

Celluloid is referred to in patent to Stevens, No. 650,431 of May 29th, 1900.

Valenite and celluloid are referred to in patent to Wolcott, No. 669,739 of May 29th, 1900.

Celluloid, a mixture of wax and rosin, water-glass, plaster-of-Paris, starch and bees' wax and rosin, are materials which are referred to for the manufacture of molded records in patent to Capps, No. 666,403 of January 22nd, 1901.

A mixture of metallic soap and ceresin is described in patent to Edison No. 667,202 of February 5th, 1901. This is the ordinary blank composition:

A mixture of stearate of soda, palmitate of soda, stearate of lead, oleate of lead, colophony or rosin, and ceresin, is disclosed in my patent No. 676,111 dated June 11th, 1901:

A mixture of stearic acid and ceresin is suggested in reissue patents to Macdonald No. 12095 and 12096 of March 10th, 1903. These patents also refer generally to soap mixtures, which would include the ordinary blank composition. These patents describe the manufacture of molded records.

A mixture of pyroxyline, camphor and a suitable adulterating pigment, such as zinc, white kaolin, barite, magnesium, red lead

or colored mineral earth, for the manufacture of molded records by a casting process is suggested in the patent to Pettit, No. 683,979, dated October 8th, 1901, which also refers to the formation of a surface coating of celluloid or pyroxyline composition.

Substantially the same materials are suggested in the patent to Pettit, No. 685,117 of December 17th, 1901, except that for the formation of the surface coating, gelatine, lac, glue, gum, and colodion are suggested. In this latter patent to Pettit, the process is one in which a blank is expanded in contact with the mold, and is not cast as in the modern art.

A large variety of materials and compositions for the manufacture of molded records made, however, by an expanded process are suggested in patent No. 688,000 of November 11th, 1902. These are the following:

- (a) Asphalt,
- (b) Stearic acid, or stearate of soda, mixed with chalk, slake lime, or lamp black,
- (c) Sealing wax or shellac, mixed with chalk,
- (d) Polished ebonite,
- (e) Vulcanized hard rubber,
- (f) Celluloid,
- (g) Glue, either alone or mixed with chalk.

A mixture of bees' wax and rosin is suggested in patent to Jones, No. 727,960 of May 12th, 1903, as a blank composition.

In the examination which I have made above, I think I have included all the American patents in this art in which materials or compositions are suggested as suitable for the manufacture of blanks or for the manufacture of molded records. In none of these patents is there a recognition of the special conditions of the art, or of the desirable properties which a suitable molded record composition should possess. Nor is any composition described which I would consider as suitable for the manufacture of molded records, except in a very crude and ineffective way.

Q. 44. Of the many suggested ingredients for use in the manufacture of phonograph records that you found in the patents in this art, what ingredients would be suitable for addition to the ordinary blank material, if the only thing that had to be done was to increase its hardness?

A. The following are the materials which might be suitable for hardening ingredients:

- Carnauba wax,
- Asphalt,
- Metallic soap,
- Celluloid,
- Glue,
- Resins,
- Magnesium Palmitate,

Gum cotton,
Ebonite,
Leard stearate,
Magnesium stearate,
Aluminum stearate,
Plaster-of-Paris,
Shellac,
Sand,
Sawdust,
Gutta Percha,
Sealing wax,
Stearate of soda,
Vulcanite,
Chromatized gelatine,
Rosin,
Colodion,
Chalk,
Slake lime,
Lamp black.

20 Q. 45. Please state how many of these ingredients could be actually used as an addition to the blank composition for the purpose of producing a satisfactory composition for the molded record art? A. Caranaba wax.

Q. 46. Why could not the others be used?

A. Because some of the materials, such as asphalt, celluloid, gum cotton, glue, ebonite, vulcanite, chromatized gelatine, and colodion, would not form a homogeneous mixture. Others, such as rosin, gutta percha, sealing wax, resins and shellac, and metallic soaps, like magnesium palmitate, magnesium stearate, aluminum stearate, and lead stearate, would not convey the proper properties of shrinkage necessary in this art. Stearate of soda, though possible as a hardening ingredient if added to the blank composition, is undesirable for the reason that it would make the material hygroscopic and would not resist wear effectively. Still others, such as sand, sawdust, chalk, plaster-of-Paris, lamp black and slake lime, might be mixed in the form of a fine ground powder, and would have a hardening effect, but the resulting surface would be too rough for the proper reproduction of the sound record.

40 Q. 47. Referring now to prior patents, which specially describe compositions for use in the molded record art, I first direct your attention to the Edison patents of February 5th, 1901, Nos. 667,202 and 667,662 respectively, and ask if the compositions

described therein are suitable for the art and if not in what respects they would be unfitted therefor?

A. The compositions referred to in the patents are in one case a mixture of molten metallic soaps, and in the other case a mixture of a metallic soap or combination of several soaps, to which has been added a material not affected by water, such as ceresin. The latter material corresponds with the blank composition, to which I have already referred, and is not a suitable material for the practice of this art for the reasons which I have already given in detail. The blank composition is too soft and as I have already explained, does not possess the proper requirements as to shrinkage. A metallic soap without ceresin is equally unsuitable, because of its improper shrinkage, and further, because it would be very hygroscopic.

Q. 48. Having reference to your own patent No. 676,111, dated June 11th, 1901, is this composition suitable for the molded record art?

A. The composition referred to in patent No. 676,111, is a mixture of stearate and palmitate of soda, stearate and palmitate of lead, oleate of lead, copolophony and ceresin. This composition was made for the purpose of molding records therefrom, but owing to its peculiar properties of solidifying, I was not able to utilize it for that purpose, although it made very good material for blanks, owing to its perfect homogeneity, the material being so free from crystalline structure that it was transparent or nearly transparent. It had the desirable properties of wearing well, but it could not be successfully molded, as a record, although it would be molded for use as a blank. The material had the property of shrinking away from the mold before the mass had become sufficiently hard to retain its shape. That is, the outer layer or the layer next to the bore of the mold would become hard enough to leave the mold when the interior was still almost fluid, so that when the attempt was made to ream it the record invariably turned in the mold. The material furthermore, was very tough while warm, which made the reaming operation quite difficult, and when in a molten condition and at a temperature at which the molding operations were performed, the material was rather viscid and did not flow well into the indentations of the mold, so as to take a sharp impression.

Q. 49. Am I to understand from this patent that you did not take up, as a matter of course, the blank composition with the idea of modifying it, so as to fit it more perfectly for the molded

record art, but that you attempted to make a completely new composition for that art?

A. That is correct. My knowledge of what had been done in the way of experimenting on molded records by Mr. Edison and Dr. Schultz-Berge, his assistant, using the regular blank composition and other compositions, led me to believe that it was not a desirable substance to work with, and I tried many other compositions before trying the blank composition at all. One of these compositions was that which is mentioned in the patent referred to in your last question. It was not until I had failed in making an entirely new composition suitable for the practice of this art that I came to a full realization of the desirable properties possessed by the blank composition and concluded that if it were properly altered to suit the new conditions, it might be used. As I have previously testified, I did not succeed in imparting to the blank composition the desirable new properties which it should have without destroying any of the desirable properties which it already possessed, until the composition of the patent in suit was accidentally discovered.

Q. 50. Please refer now to the two Macdonald reissue patents of March 10, 1903, No. 1,2095 and 1,2096 respectively, and state whether the compositions referred to therein are suitable for the practice of the molded record art?

A. In these patents a composition of stearic acid and cerein is mentioned, and such a composition is not suitable for the practice of this art, for the reasons, first, it cannot be practically molded; second, it does not have the required wearing properties; and third, the material is not sufficiently coherent to leave the mold clean, which would result in a foggy surface on the record. Possibly, in these patents, the patentee may have had the blank composition in mind, as he refers to "the composition at present employed" and if this is so, I have already pointed out the undesirable properties of that composition for this art.

Q. 51. Kindly consider the patent to Petit, No. 683,079, dated October 8th, 1901, which refers to making molded records and state whether the composition referred to is suitable for the practice of the art?

A. In the patent referred to in your question, the composition mentioned, is pyroxynin and camphor, mixed with a quantity of pigments, such as zinc and kaolin and baryta, magnesium, red lead, colored mineral earth, or similar suitable materials. I do not consider that this composition would be suitable for the prac-

tice of this art even to the slightest extent by a casting process as described by this patentee. All modern molded records are now made by casting processes. This material does not become sufficiently fluid to lend itself to a casting process. Furthermore, the material would not present a sufficiently smooth surface to produce the perfect results which are necessary in this art, and the composition, on account of the volatile constituent (camphor), would change considerably after the record had been made, which would cause it to become distorted and with a roughened surface. Furthermore, this composition would not lend itself well to the manufacturing operation, as it would be difficult to remove from the mold by the method of shrinkage and longitudinal extraction. If sufficient pressure were used with the composition, it might possibly be molded, but this is not the present practice of the art, which requires a composition that can be perfectly cast. Furthermore, this would be a very expensive composition and even if it could be practical successfully it would not be desirable because the operations would be so slow and tedious. The art requires a composition which can be molded rapidly.

Q. 52. Kindly consider the patent to Petit, No. 689,117, dated December 17th, 1901, and state whether this patent describes a composition or material that would be suitable for the practice of the art by a casting process?

A. The patent referred to in your question mentions a composition of celluloid, which is practically the same as that mentioned in my last answer, and is open to the same objections. In addition to the celluloid composition, mention is made of a surface film composed of gelatine, lac, glue, gum, colodion, or similar materials. These materials are also open to the same objections as celluloid.

Q. 53. Kindly refer to Edison patent No. 713,209, dated November 11th, 1902, and state whether you find in this patent, suitable compositions or materials for the practice in the molded record art by a casting process?

A. The patent referred to in your question refers to the following materials or compositions:

- (1) Asphalt,
- (2) Stearic acid or stearate of soda, mixed with chalk, slake lime, or lamp black,
- (3) Resins, such as sealing wax or shellac, mixed with 40 chalk,
- (4) Polished ebonite,
- (5) Vulcanized hard rubber,

(6) Celluloid,

(7) Glue, either alone or mixed with chalk.

Taking these materials in the order which I have given them—
 (1) Asphalt has the objections of being unmodifiable; that is to say, it does not have the proper condition of shrinkage that would enable it to be gotten out of the mold.

(2) Stearic acid, or stearate of soda, mixed with fine precipitates, such as chalk, slate-fine or lamp black, would not be suitable, because I find such mixtures are too rough for the purpose of reproducing sound records and this material will have the objections of warping and irregular shrinkage, to which I have previously referred in connection with the blank composition.

(3) Resins, such as sealing wax or shellac mixed with chalk, cannot be molded by the casting process, as practiced in this art, for the reasons that they stick to the mold and do not have sufficient contraction to be removed therefrom.

(4) Ebonite is not suitable, because it does not become fluid enough to cast.

(5) Vulcanized hard rubber would have the same objection as ebonite.

(6) Celluloid has the objections pointed out in connection with the Petit patents.

(7) Glue alone, or mixed with chalk, is too sticky and cannot be removed from the mold. Furthermore, if it could be removed from the mold, it would not be suitable on account of its being susceptible to atmospheric moisture and it also warps, and in the case of mixtures of glue and chalk, they would be too rough for the proper reproduction of sound records.

Q. 54. Are your criticisms of the materials mentioned by Mr. Edison in his patent based on the actual knowledge of experiments with these specific compositions or materials, or are they based on your general familiarity with the art?

A. They are based on my knowledge as derived from witnessing experiments made by Mr. Edison and his assistants and from experiments which I have made myself.

Q. 55. Are you able to state of your own knowledge whether Mr. Edison at any time ever attempted to solve the problem of producing a satisfactory molded record composition suitable for this art?

A. Yes, I recollect that as far back as 1889, Mr. Edison made many experiments in attempts to mold duplicate sound records. In connection with these experiments, I made a number of compositions and witnessed the molding operations with them, but

the results were never considered successful. I know that Mr. Edison worked for several years on this problem, during which time the molds were as perfect as they are now and the blank composition as now known was fully understood. The important problem was to produce a satisfactory composition.

Q. 56. Will you please explain in very general language the development of the commercial molded record art?

A. I entered the Edison Laboratory in the fall of 1887. At that time there were two talking machines on the market, one the Edison Phonograph, which was manufactured by the Edison Phonograph Works, and was later sold through the North American Phonograph Company, and the other the Graphophone, which was manufactured by the American Graphophone Company and was later also controlled by the North American Phonograph Company. The Edison phonograph in those days was a crude and imperfect machine as compared with the perfected instruments of the present date, but it contained the germ of the modern phonograph. More particularly, it made use of a blank that was in appearance, practically identical with modern blanks although the composition was relatively soft and sticky. The composition used was composed of a mixture of ceresin and cerinolis wax. Improvements were made very rapidly, so that by 1890 the phonograph was a very perfect instrument and contained practically all the features of the modern machine. The graphophone, on the other hand, was a very different machine from the modern graphophone, and made use of a blank slightly over an inch in diameter and about six inches long and was formed of a paper tube coated with a mixture, as I now recall, composed largely of eozercite. No change was made in the graphophone blanks so long the original form of machine was retained. Sometime in 1888, I developed the modern blank composition consisting of free stearic acid, stearate of soda, stearate of alumina and ceresin, from which all Edison blanks have been made from 1889 onwards, up to the present time. This composition was an enormous improvement over compositions formerly used, and made the Edison Phonograph a much better machine than the graphophone. From that time onwards, for several years, very few, if any, graphophones were used, as they appeared to have been entirely displaced by the Edison phonographs. At first, the phonograph was used largely for dictation purposes, but gradually a demand was created for musical records, from six to a dozen being made at the same time by the artist, band or orchestra, singing or playing simultaneously into a

number of phonographs, so that the songs would be directly recorded on the blank of each. Later, the records were duplicated mechanically, by taking an original record and obtaining a duplication therefrom by transferring devices, whereby the reproducer engaging the original or master would actuate a recording stylus, so as to cause the latter to cut a copy of the record upon a blank. But these operations were slow, and since the original or master record would become quickly worn out, the quality of the duplicates was poor. About the year 1900, at Mr. Edison's request, I took up the work of developing a suitable duplicating process in collaboration with Mr. Walter H. Miller. This was very difficult work, since the conditions were new and we were dealing with an exceedingly delicate proposition, but we were quite successful, so that from the time the model records were first put on the market by the National Phonograph Company on February 1st, 1902, until the present time, there have been no changes in the operation except the special refinements which would naturally come after several years commercial experience. Concurrently with our experiments in the development of a suitable process, I myself, was working on the completion of the patent in suit, concerning which I have already testified. In my opinion, if that composition had not been invented, the model record art would have been seriously handicapped. Many millions of records have been made by the National Phonograph Company of the patented composition.

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Adjudgment to Wednesday, February 26th, 1907, at 10:30 A. M.

ORANGE, N. J., Feb. 20, 1907.

30 Met pursuant to adjournment.
Present—Counsel as before.
Examination by Mr. AYLSWORTH is continued.
Q. 57. Will you produce a copy of the patent covering the process referred to in your last answer as having been developed by Mr. Miller and yourself?
A. I produce a copy of this patent, which was granted October 1st, 1901, and numbered 883,615.
Q. 58. Referring now to the experiments which you state were made for the purpose of comparing the patented composition with certain other compositions, and referred to in answer to Q. 12, when were those experiments made?
A. In the latter part of December and during the first two weeks in January last.

Q. 59. Were these experiments observed by any one except yourself?

A. Yes, they were witnessed by Messrs. Holden, and Dadd, as to the making of the composition, and by Messrs. Holden and Nehr, as to the molding of the records from the composition; the inspection was witnessed by Messrs. Holden, Sturms and Payne. Of course, the actual molding of the records and the inspection was done by operators in the factory who regularly do that work.

Q. 60. Please explain now what particular compositions were made for the purpose of these experiments, giving the ingredients, temperatures, and methods of manufacture in each case?

A. The following compositions were made; designated respectively, A, B, C, D, and E:

Composition A is the composition of the patent, omitting the ceresin and carnauba and lamp black ingredients. This composition is what is known in the factory as "hard regular," and it was made to use as a basis for forming the other compositions, B, C, D, and E.

Composition B is a recording blank or tablet composition; and it was made to use as a basis for forming the other compositions, C, D, and E.

Composition C is composition A plus both ceresin and carnauba was in the proportions of the patent in suit and is in all respects the same as the patent in suit with the exception of the omission of the lamp black, and the temperature of mulling the wax was kept low, the temperature not exceeding 320° F., at which temperature no reactions appear to take place as evidenced by foaming.

Composition D is composition A to which carnauba and ceresin are added in substantially the proportions used by defendant and at the temperatures practiced by defendant, which was practically the same as that of the Aylsworth patent, the only difference being a somewhat smaller percentage of carnauba than that mentioned in the patent.

Composition E is composition A with carnauba, ceresin and lamp black in the proportions of the patent, and formed by the same methods as mentioned in the patent so as to produce the reactions between the carnauba and the balance of the composition.

The carnauba was used in these experiments was the regular article of commerce which had been previously washed with boil-

ing water; then, after separating from the water, it was heated to drive off any contained water and then filtered. In order to supply enough material to fill the dipping tank with each experiment, it was necessary to make in all about 1600 pounds of composition A, the base composition from which the others were formed. Each separate experiment required about 450 pounds. This composition A was thoroughly foamed off at 440° F. before filtering. It took about an hour to foam off the material so that it became perfectly free from scum or foam. After filtering, the material was poured in pans and cakes formed of it, which were marked by Mr. Holden and myself. This material was set aside to be used for the composing of the four compositions used in the experiment. The proportions of the ingredients used in forming composition A were—

800 lbs. stearic acid,
5616 grams of Caustic soda,
1400 grams of sheet aluminum,
172 lbs. of sal-soda.

These materials were mixed in the same manner as described in the patent and are in the same proportions with the exception of the omission of ceresin, carnauba and lamp black. The material was made in two lots, using the same charge and proceeding in the same manner with each lot.

Composition B was formed by taking 450 pounds of composition A, and adding thereto 94 pounds of ceresin. Composition A was first melted at a temperature raised to 290° F. when the 94 pounds of ceresin was added, and the temperature increased to 440° F. and filtered. No foaming whatever took place. The composition was started at 10 A. M. December 28th, 1906, and was finished on the same day at 1:30 P. M. The congealing point was tested by Mr. Dodd and was found to be 290° F. After filtering the wax was transferred to the dipping tank and the temperature allowed to fall at 290° F. and the dipping started. 93 records were dipped, and each record was allowed to stand on the cores for about two hours. They were then set aside to be put through the finishing operation and the regular factory inspection, which was done on the following day, the results of which and of the other composition which were made are tabulated on one sheet for purposes of comparison, which tabulation will follow after the description of the balance of the composition. The molding was done under the personal supervision of Mr. Nehr, Mr. Holden and myself witnessing them. The finishing and parts of the inspection were done in Mr. Sturm's Depart-

ment; the final inspection was done in Mr. Payne's Department. The other compositions, namely C, D and E, were molded finished and inspected in the same manner and by the same operators, as was done with composition B.

Composition "C."

433.1 lbs. of composition "B" (which contains
358.3 lbs. of composition A,
74.8 " " ceresin)

was melted and brought to 350° F. and 72.5 of the purified carnauba before mentioned was added, which brought the temperature down to 310° F. The temperature was then raised to 320° F. and held for a short time. The total time for making the composition from start to finish was about four hours. The congealing point was regulated by Mr. Dodd to make it exactly the same as with composition B, namely 290° F. After filtering the wax was transferred to the dipping tank and 65 records were molded under practically the same conditions as were maintained with the molding of composition B. These records were set aside to be finished in the same manner as composition B.

Composition D.

412.5 lbs. of composition A is melted and brought to 400° F. and 57.6 lbs. of the purified carnauba was added and the temperature then raised to 460° F., and held at this temperature for two hours before adding ceresin, 70.5 pounds of which material and pounds of lamp black were then added and the temperature maintained at about 460° until all foaming ceased, which took about 5½ hours from the time the carnauba was added. Foaming began to form soon after the carnauba was melted, and the foam raised to a height of 5 inches over the surface of the composition so that there was a continuous formation of foam and shuttling of gas for nearly four hours. It ceased to foam while the temperature was still maintained at 460° and the temperature even raised higher than 460° toward the end without producing more foaming. The congealing point of this composition was regulated by Mr. Dodd to 292° the same as in the other compositions. The material was filtered and transferred to the dipping tank and 95 records molded under practically identical conditions

as Compositions B and C. They were finished and inspected under the same conditions and by the same operators as those made from compositions B and C.

Composition E.

Composition E was formed by heating that which was left of composition C to the temperatures of the patent and adding thereto the lump black in the proportions of the patent. In other words composition E is absolutely identical with composition C excepting what physical changes may have taken place by reason of the high heat and the reactions consequent to the high heat. The batch was started at 9.25 A. M. January 31, 1907, and at 10 A. M. the temperature was 450°. The foaming began as soon as the temperature got over 400° and soon raised to a height of about six inches over the surface of the composition. At 1.35 P. M. the wax was still foaming strongly and at 2 P. M. foaming had practically ceased. The congealing point was then regulated to 290° the same as in the other compositions, and the composition was molded, finished and inspected in the same manner and by the same operators as in compositions B, C and D. 80 records were molded from this composition.

Tabulated results of the four experiments, B, C, D and E, are as follows:

	No. Cracked Chipped Blown Broken Not round				%	Good		
	Molded	Edger	Hot	in				
	Broken				Good			
	handling				Run	Out		
30 B	93	10	6	5	2	56	14	15
C	65	17	7	8	0	23	10	15.4
D	95	18	8	4	0	35	30	31.6
E	86	7	7	4	0	40	28	33.5

Q. 61. Am I correct in understanding that as to the four compositions referred to in your last answer, composition B, is the ordinary blank composition, which you have frequently referred to; composition C is the exact composition of the patent made at a low heat insufficient to effect chemical reaction; composition D is the composition used by defendant, being that of the patent with a smaller amount of erubalva wax, and composition E is that of the patent made at a high temperature?

A. You are correct.

Q. 62. In answer to Q. 60, you refer to "dipping." What is this operation?

A. By "dipping," I mean the molding or casting of the record. Q. 63. Having reference to the table which you give at the end of your answer to Q. 60, do I understand that this is based entirely on your own observations, or is it based on the reports of others?

A. It is based partly on my own observation and partly on the reports of Messrs. Sturms and Payne. I personally witnessed together with Mr. Holden, the finishing operations and the first inspections. Also, most of the molding operations in each case.

Q. 64. Do I understand correctly that the figures given in the first column of this table represent all of the records molded from the several compositions?

A. No, these were not all of the records molded of the several compositions. As a matter of fact of composition B, 103 records were molded and ten were rejected for defects which were not due to the composition, and in composition C, 101 were molded and thirty-six were rejected for defects not due to the composition, and in composition D, 99 were molded and four were rejected for defects not due to the composition, and in composition E, 103 were molded and 17 were rejected for defects not due to the composition.

Q. 65. What were these defects that you say were not due to the composition and because of which certain of the records were rejected?

A. They were defects which are known as "rings" that is, concentric lines formed around the surfaces of the records, due to the speed at which the mold was lowered into the wax composition. Another defect was wax chips, which is caused by little particles of wax, breaking off from the record at the ends, usually in withdrawing from the mold; these being electrical are frequently attracted inside the mold and stick on the surface of the mold leaving an imperfection. Another defect is what we called "bruised;" this is due to mechanical injury to the record surface, due to handling. Dirty mold, another defect, would ordinarily be due to the composition, but in these experiments it was thought best to have the mold cleaned wherever they showed any smeary appearance, as this could be done readily with any composition. Another defect is "surface scratches," which is due to withdrawing the record from the mold and may occur with any composition.

Q. 66. Suppose these records had not been rejected because of

these defects, would the results have been substantially different from that shown in your table?

A. If these defects had been counted it would not have materially changed the percentages shown in the table.

Q. 67. Having reference now to this table, and taking up the first reason for rejection, namely, "Cracked and Broken," what connection is there between this matter and the several compositions?

A. It indicates brittleness, but of course the records lost from this cause are not due entirely to the composition, as there are always from any composition losses from this cause which will vary considerably, but in the case of an extremely brittle composition, of course the losses on this account would be very marked.

Q. 68. What about the defect of "Chipped Edges"?

A. The brittleness of the composition would cause chipped edges to take place more in one case than in another; that is to say if there were great difference in the brittleness of the material, there might be more chipped edges than would be the case with a softer, tougher material. In this respect also, the handling of the records would cause chipped edges without regard to the composition.

Q. 69. Now please consider the question of "Blow Holes" and state what bearing, if any, this has upon the composition?

A. "Blow holes" are ordinarily present in a small degree in the best compositions obtainable, due to mechanical agitation of the material, but if the composition contains much decomposable material, so that it was constantly giving off gas, in that case there would result blow holes in the records, directly due to the composition. In these results, however, while we have counted the blow holes as a defect due to the composition, yet their proportions is in only one case large enough to be attributable to the composition. With this composition, the temperature was purposely kept very low in making the composition and possibly there were some decomposition products which gave off a little gas during the molding operation. This is composition C.

Q. 70. Now take up the next defect, namely "Broken in Handling," and state what, if any, bearing this has on the composition?

A. The losses in this case were only 2 in composition B, and they were purely accidental and had nothing to do with the composition. They are included here merely to account for the record.

Q. 71. Now consider the final defect, namely "Not round and

Run Out" and state what these expressions mean and what bearing, if any, they have on the respective compositions?

A. These defects are due to warping and is a property inherent in the composition. The particular kind of warping, which is called "not round" means an eccentric or slightly oval record, and that which is called "run outs" is an uneven warping which distorts the record groove and tends to cause the reproducing stylus to jump from one record groove to another.

Q. 72. As I understand this table then, the two principal defects which are encountered in molded record compositions relate first to warping or irregularities in shrinkage, and second to brittleness. Is this correct? *A.* Yes.

Q. 73. Is it a fact that under commercial operations with the patented composition only about 32% of good records are secured?

A. No, in commercial operations, we get a considerably larger percentage of good records, but in order to make comparison, which would be as fair to one composition as to another, we put these through a more rigid inspection as to defects than would be practiced in commercial work. We put them through the same sort of inspection which we give our regular composition, when any change is made therein as to altering percentages. It is also the same inspection which we make for our molded masters.

Q. 74. Was the inspection the same with one composition as with the others?

A. It was exactly the same in each case.

Q. 75. Were the results which you obtained with each of these compositions substantially what you would have expected to obtain from your experience in this art?

A. The general trend of the result is substantially what I would expect, although in the case of composition B the results were better than I had expected to get. In fact in the earlier days or stages of the molded record art, we were not able to get anything like as good a result with the blank composition. The results that we got in these experiments with the blank composition are due to the fact that at the present time the art is so well known that it becomes possible to mold almost any composition with at least some degree of success.

Q. 76. Would it be a fair statement of your opinion based upon your experience in this art, to say that at the present time when the art has been developed to a high state of perfection, with the patented composition the percentage of good records

would be at least twice as high as with the blank composition molded under the same conditions?

A. Yes, as to the percentage passable if we consider the defects as noted in the table; but in addition to these defects, the quality of the records produced by the blank composition was inferior to that produced in the other or patented composition, because of a persistent foggy surface which these records made from the blank composition have, which though it disappeared on burnishing, left what we call a bad surface, and we would not use a composition which would give this defect even though it were perfect in every other respect as to its molding property.

Q. 77. Then, as I understand it, if in addition to the difficulties which arise in the molding operation, we consider the character or quality of the record surface the percentage of good records which can be molded from the patented composition is more than twice as great as can be molded from the blank composition under the same circumstances?

A. Yes, that is correct.

Q. 78. It appears from this table which we are discussing that so far as concerns the results, which relate to the molding properties of the several compositions, there is no substantial difference between the composition obtaining the proportion of carnauba, specified in the patent in suit, or the somewhat smaller proportion of carnauba used by defendant. Is this correct?

A. Yes, that is correct, there is practically no difference.

Q. 79. Would there be substantially any difference in the quality or character of the records made from the two compositions?

A. There would be a slight difference as to the number of times they could be reproduced without wearing out, but otherwise there would be no difference. The patented composition would be somewhat more durable.

Adjourned to Thursday, February 21st, 1907, at 10.30 A. M.

ORANGE, N. J., February 21, 1907.

Met pursuant to adjournment.

Present—Counsel as before.

40 CROSS-EXAMINATION, by Mr. MASSIE:

Defendant's counsel enters timely objection to the statement by complainant's counsel in questions 38, 39 and 42, as to defendant's contentions in this case. Complainant's statements may, or may not, be correct.

30 xQ. 80. Does the presence in the metallic soap composition, for instance, your "hard regular," of the wax-like compound either obtained from carnauba wax, render the composition more limpid?

A. Interpreting the word "limpidity" as meaning more mobile or fluid, the addition of the carnauba wax and waxlike ether contained therein and produced by reactions that take place during the making of the wax composition does increase the limpidity to a perceptible extent; that is to say, perceptible not to the eye direct, but by the aid of physical instruments, such as a viscosity meter.

xQ. 81. Your answer is not quite responsive to my question. If you add carnauba to what you have been calling your "blank composition," but do not employ the temperature called for by the patent in suit, am I correct in understanding, first, that in your opinion the wax-like ethers are not produced; and if I am correct, would the presence of the thus unmodified carnauba increase the limpidity?

A. In my opinion if the carnauba wax is added to the blank composition and the temperature kept down to about 300°, there would not be additional wax-like ethers formed, other than those contained in the carnauba wax. The composition in this case would be more fluid or limpid than the blank composition. In other words, whether the composition was heated during the manufacture of the wax to the high or low temperature would not materially affect the limpidity or fluidity of the composition.

xQ. 82. Are you familiar with the composition set forth in the Macdonald patent No. 606,725 of July 5, 1898, and of Macdonald patent No. 626,709 of June 13th, 1899, which have been offered in evidence by defendant?

A. Yes, I am familiar with these patents and recognize them as the ones involved in the companion suits. I was familiar with the compositions therein disclosed a long time before the dates of the applications for those patents.

All but the word "yes" objected to as volunteered.

xQ. 83. Have you ever added carnauba wax to that Macdonald composition, with the temperature called for by the second Macdonald patent referred to, and also, with a lower temperature of about 300° F.; and if you have done so, what did you observe with regard to limpidity as compared to the limpidity of the same composition without any carnauba?

Mr. Dyer—I assume that by the expression "Macdonald composition" counsel intends to refer only to the

"composition of the Macdonald patents." Otherwise, the expression is believed to be misnomer.

A. I have tried the experiments of adding carnauba wax to our blank composition, which is essentially the same as the composition referred to in the Macdonald patent, both heated to a temperature of about 300° and to a temperature of about 450°, and the limpidity I believe in either case will be the same. But I have not made accurate limpidity or viscosity tests on these two compositions for comparison. I have made the limpidity tests on the composition containing carnauba heated at the low temperature in comparison to the same composition plus lamp black and heated to the high temperature, and in this case the limpidity of the composition containing lamp black was just about the same as the blank composition containing no carnauba, and the composition containing carnauba and not containing lamp black and heated at the low temperature was more fluid than either of the other compositions. The presence of the lamp black reduces the limpidity to a slight extent so as to just about neutralize the increased limpidity, due to adding carnauba.

20 xQ. 84. What is the effect, as regards limpidity, of adding ceresin to a metallic soap composition, containing no carnauba?

A. It would have the effect of increasing the limpidity.

xQ. 85. How do you know this and when did you first ascertain the fact?

A. At the time the experiments were being made on the record composition. At that time, I did not test them with any form of a viscosity meter, but just by noting the results of molding the composition.

xQ. 86. When did you first ascertain from literature or otherwise that carnauba was when molten is more limp than the metallic soap composition at the same temperature, and that the presence of carnauba increases the limpidity?

A. I do not recall just when I made this observation, excepting that I do remember that when making the experiments this property was recognized by me as being a desirable thing in compositions.

xQ. 87. Is it not a fact that the property of being comparatively very limp, that is, non-viscous, when molten is inherent in carnauba; and whenever carnauba was melted and cooked with other less limp compositions the result of increased limpidity would always take place?

40 A. No, it is not a fact that it could be mixed with any substance or composition, and result in increased limpidity; for

instance, if carnauba wax is mixed with a composition containing an excess of caustic soda, or other alkali, the alkali would combine with the carnauba wax and result in a viscous mass; and if the caustic soda were in a sufficient amount, there might be a material which could not be used at all without clarring. A composition of this sort might be made in the following manner:

Paraffin or ceresin might have added thereto say—20% of stearic acid, and say—3 times as much caustic soda as would be necessary to completely saponify the 20% of stearic acid, leaving therein a large excess of caustic soda; then if carnauba wax were to add the soda combining with the carnauba would result in a more viscous composition. Carnauba was considered alone, or admixed with materials whereby no combination, such as I have just illustrated takes place, would naturally result in increased limpidity, providing the substance with which it was mixed was in itself more viscous than the carnauba wax.

xQ. 88. How long have you been familiar with the fact, from literature or otherwise, that molten carnauba is comparatively very limp, and that it mixes readily with wax-like compositions (metallic soaps or otherwise) provided there be not an excess 20 of alkali present in the mixture?

A. From literature I have not been aware of these facts; my personal observations with carnauba wax since the early days of experimenting with wax-like compositions have taught me that it was when molten, quite limp, but as to its being miscible with all wax-like compositions my earlier experiments have taught me that it is not miscible with all wax-like compositions. There are many cases which I can recall where experiments were actually made where carnauba wax is not miscible with such wax-like compositions, instances of this being attempts to mix 30 carnauba with shellac, with certain asphalt, with certain metallic soaps, such as resinates of magnesia, resinates of lime and many other substances. The fact that asphalt does not mix with stearate of soda would lead to a serious doubt as to whether carnauba was would mix with stearate of soda. Asphalt, however, will mix with other true vegetable waxes and some forms of asphalt will mix with carnauba wax. These things have to be all determined by experiment.

xQ. 89. Are resinates of magnesia and resinates of lime fusible?

A. Yes, at quite a high temperature.

xQ. 90. What was the specific gravity of each of the two compositions whose limpidity you compared as stated in answer to Q. 4, or at least how did they compare as to specific gravity?

A. I have not as yet made a specific gravity test, although I expect to make one. My tests were made with a simple form of viscosity meter, as I have already described.

10 xQ. 91. If you will, I should be glad if you would ascertain the specific gravity of a composition produced in accordance with the two Macdonald patents of 1898 and '99 respectively, named in xQ. 82; the specific gravity of carnauba; and the specific gravity of the first-named composition containing carnauba in the amounts used by defendants? For the purpose of this determination, my recollection is that you have obtained some specimens of the special records produced by our witness Thornberry.

By Mr. Dyer—Perhaps it might be well to state on the record what has already been explained to counsel for defendant. The purpose of the present deposition of Mr. Aylsworth is to obtain his opinions concerning the statements of his patent as well as to testify to certain facts. Later it is proposed to have him testify in reply to the depositions of defendant's experts Holton, Cameron and Munroe. In the interval the tests requested by counsel for defendant can be made as well as any other tests or experiments that counsel may request.

xQ. 92. In answer to Q. 5 you refer to "decomposition products" etc., what ingredient, or what step, in the patent in suit removes or prevents the presence of decomposition products?

A. Selection of the different ingredients, purifying the same by washing and by filtration and filtration of the resulting composition. Of course if the materials were not pure, the high heat would eliminate the cause of gas bubbles.

30 xQ. 93. "Selection of materials"—suppose the materials had been absolutely purified, and the resulting composition has been properly filtered, and the high heat has been employed, the omission of what ingredient or ingredients from those entering into the composition of the patent in suit, would result in the presence of decomposition products?

A. As I understand your question you mean that if any one of the ingredients had been omitted, you would still have a product free of decomposition products, provided the precautions noted in my previous answer had been followed. On this

40 assumption, I answer—yes.

xQ. 94. Then, the freedom from decomposition products is due entirely to the purity of the ingredients the carefulness of manipulations and the high temperature?

A. Yes, to these and to prolonged heating at a high temperature. I would state, however, that if the ingredients were all pure and free from the causes of decomposition products, that the high temperature would be unnecessary.

xQ. 95. As a matter of fact, are the materials entering into the composition of the patent in suit, if pure, "free from the causes of decomposition products"? By decomposition products in this connection, I mean deleterious products only.

A. They would be free from the causes of decomposition products, other than the products of reaction which are eliminated at a temperature around 300°. By this I mean the water and carbonic acid gas, which are expelled during the making of the wax. They, of course, would be objectionable products if not removed by cooking a sufficient time at the temperature whereby they are driven off. In the case of carnauba wax, if the temperature is kept low, there would be no decomposition products evolved, but if the temperature were increased during the use of such material up to the neighborhood of 400°, there is evolved gas which manifests itself as bubbles and foam in the material. These would be, of course, objectionable, but if the material were used at temperatures below this I do not think it could be considered as containing objectionable decomposition products.

xQ. 96. Can you answer yes or no to the question whether in carrying out the manufacture of the composition of the patent in suit, assuming that you have absolutely pure ingredients, and employ filtration with utmost care, is or is not the prolonged high temperature necessary in order not to have deleterious decomposition products?

A. Under the conditions of purity and care which you mention, I do not consider that the high temperature would be necessary to avoid decomposition products, but that it would be necessary to make a composition having the desired properties as described in the patent in suit as to the molding qualities. As a matter of fact, the composition designated "C" in answer to Q. 60, is such a composition in respect to the carnauba ingredient and did not show any of the deleterious effects due to the decomposition products. This composition, however, was made from a blank composition which had been subjected to the high temperature previous to adding the carnauba.

xQ. 97. Near the close of your answer to Q. 5, you are viewing 40 your composition in suit as consisting of the old blank composition which you regard as substantially the same as what I call the "Macdonald composition") "modified by the addition of a

new ingredient added in a new way to produce new results." Assuming that the "new ingredient" is carnauba, what is the "new way" in which it is added?

A. The "new ingredient added in the new way" is referred to in answer to Q. 5 is carnauba wax added to the blank composition and heated for a sufficient time to a temperature about 450° to produce certain reactions, which are evidenced by a copious chullition of gas and which reaction begins in the neighborhood of 400°, and continues for a considerable time, amounting to several hours, even when the temperature is raised to 460°. If the temperature were maintained at a somewhat lower degree for example, at the point where the reaction begins to take place, a very much longer time would be necessary to complete the material.

Q. 98. The "new way" of adding carnauba, then, is to maintain the comparatively high temperature of about 450° until the foaming off has practically ceased?

A. Yes, that is what I mean by the new way. To make this more clear I would state that the old way to make such mixtures was to add the ingredient to the blank composition which had previously been foamed off and after a thorough mixture of the molten material, which in such experiments usually was done at a relatively low temperature compared to the temperature used in foaming off to remove decomposition products. In my experiments, in adding various substances to this composition, a temperature from 320 to 350° was generally used. At that temperature the blank composition was sufficiently fluid, and the substances which were mixed therewith were also sufficiently fluid and there resulted a composition which so far as decomposition products are concerned was all right for the purposes that the composition was intended for, and it was only quite accidentally that the reactions which take place at higher temperatures were noted.

Q. 99. What ingredient was added to the blank composition in the "old way"?

A. Many ingredients were used, among which were asphalt, shellac, resin, various gums, and hard wax-like materials, and also carnauba.

Q. 100. The "new way" of adding carnauba which consists of maintaining the high temperature for a considerable period of time, results according to your opinion in (1) producing the compound ethers from the carnauba and the free stearic acid, (2) eliminating any deleterious decomposition, and (3) per-

mitting the process to be completed in a shorter time than if a lower temperature were employed. Do I correctly state your views; and is any other result produced?

A. Yes, assuming that the temperature is high enough to cause the reactions referred. So far as any other results being effected than those stated in your question, I do not recall any.

Q. 101. Please assume for the purpose of this question, that the reaction between carnauba (or any ingredient thereof) and the free stearic acid, results in so small a product as to be negligible; then, would not the only results of maintaining the high temperature referred to be to drive off any deleterious decomposition products and to expedite the completion of the process?

A. If we assume that there are no compound ethers formed other than those contained in carnauba, or in other words, that there is no reaction or a purely negligible reaction between the carnauba wax and the free stearic acid of the composition, the physical properties of the composition as altered by the temperature under this assumption must be due to something else, and the high heat might cause other reactions which are not known. I however, do not admit the correctness of this assumption, even if it were proved that there was an extremely small reaction and consequent product of that small reaction. It would still be reasonable to believe that they might have a relatively great influence in the physical properties of the resulting composition. An example of such small reaction and great physical change due to the same, is seen in the blank composition, where no carnauba wax is used. Here we find it necessary to add approximately 1/10 of one per cent. of aluminum, which produces a great effect in the resulting composition; namely, the prevention of crystallization. If this minute quantity of aluminum were not added, the composition would be utterly worthless.

Q. 102. Do you recall a statement in patent literature that the continued application of heat changes the physical properties of the substance known as ozokerite, even when taken by itself, rendering it tougher?

A. I recall the statement to which you refer, and I agree that with the substance known as ozokerite, which is the crude form of ceresin, that prolonged heating at a high temperature would tend to harden or toughen the material, for the reason that crude form of ceresin, known as ozokerite, is quite variable in its degree of hardness and toughness, due to oily components, which when driven off by heating to a high temperature leave the true

higher hydrocarbon of ozokerite in a more pure form. On the contrary, ceresin which is already pure, is not so toughened by prolonged heat at a high temperature, and as a matter of fact, ceresin which is the highly purified form of ozokerite, if heated to a high temperature for a considerable time, is somewhat softened by the procedure.

“Q. 103. Will you please make plain what difference, if any, there is between “hardness” and “toughness” in referring to these photomicrograph compositions?

- A. The term “hardness” and “toughness” in a measure go together, but it is possible to have a hard brittle substance and a hard tough substance. That is, one substance may be hard as evidenced by cutting with a knife, which removes a shaving, which hangs together more or less, and another substance may be hard and not so tough in which instance upon cutting with a knife, there would result a powdery shaving. The difference between purely a hard substance, and a hard and tough substance, can be noted in the composition G, as compared to composition E, referred to in my previous answer to Q. 60. The difference in 20 this respect between these two compositions is not great, but it can be noticed by one skilled in examining such compositions, and is also apparent by wear tests.

“Q. 104. Comparing two such compositions, where the thread cut from one remains integral, while the thread from the other breaks up, are the two materials equally amorphous, or is not the latter somewhat more crystalline?

- A. No, they are equally amorphous, I should say, and I attribute the greater toughness of one to the formation of some reaction product, and not to heat alone, because I had treated 30 the blank composition at both the high and low temperatures, and have not noticed any increase of toughness in this composition, due to heating to the high temperature.

“Q. 105. In a recent answer you adduce the comparison between composition “C” and composition “E,” as showing that the latter is tougher; does a similar comparison between composition “D” and composition “E” show that the latter is tougher, as indicated by the fewer number of broken records?

- A. I do not consider that the number of broken records would be an accurate indication of the difference in toughness between the compositions “D” and “E,” unless the collective results of 40 handling many thousand records by the same operators of each composition could be compared. The cracked and broken records are the result of accident in handling as well as brittleness

of composition, and unless the very large average numbers in each case were compared, whereby the results of accident would become more uniform, differences due to brittleness, would not be apparent. The wear test is a more accurate indication of toughness in these compositions.

“Q. 106. Then, as I understand you now, the figures under the column “Cracked and Broken” at the end of Q. 60, are not reliable indications of comparative brittleness or comparative toughness? A. No they are not.

“Q. 107. Is the same rule of the figures in the next column, 10 “Chipped Edges”?

A. Yes, it is true also in this column, as these defects are also due to a combination of causes.

“Q. 107. Are the figures in the next three columns (Blow Holes, Broken in Handling, Not Round and Run out) reliable indications of comparative brittleness or comparative toughness?

A. The column under the heading of “Blow Holes” has nothing to do with the question of toughness or hardness. The column under the head of “Broken in Handling” has nothing to do with toughness; as I remember, these, two records. Under the defective ones here are an indication of toughness or brittleness, but rather an indication of warpage.

“Q. 108. Is it your belief, however, that the composition of the patent in suit is tougher than the blank composition, though not so tough as the composition of the patent when the temperature does not exceed 300° F.?

A. It is my belief that the composition of the patent in suit is both tougher and harder than the blank composition, but that it is not so hard, though tougher than the composition “C,” which latter composition was formed at a low temperature.

“Q. 109. What tests have you made as to the comparative toughness and as to the comparative hardness of composition “C” and composition “E”?

A. As to hardness, I have admitted the composition “C” and composition “E” to a needle test. As to toughness, the wear tests on these two compositions show more toughness in “E” than in “C.”

“Q. 110. That one sound record will endure longer under 40 the wear test than another is due to its greater toughness, rather than to its greater hardness—is that your hypothesis, or is that a demonstrated fact?

A. I know it to be a fact that both toughness and hardness combined give the best wear.

xQ. 111. Have you ever attempted to use the composition disclosed in the Petit U. S. patent No. 683,979 referred to in your direct examination; or if not, have you any information as to the behavior of such composition other than gained from that patent itself?

A. This patent refers to molding by pressure and while I am familiar with some of the materials mentioned in this patent mixed with the molten blank composition I have never attempted to incorporate them all in a molten composition, such as the patent in suit. I am, however, familiar with the properties of the ingredients mentioned.

xQ. 112. I show you copy of U. S. Letters Patent No. 787,001 to Sanders, dated April 11, 1905. This patent names as one of the ingredients of the composition for sound records "natural oxide of iron." Is that material in your opinion gritty; and what can you say as to the quality of a record made of the materials set forth in this Sanders patent?

A. There are many forms of natural oxides of iron; it is my belief that they all of them contain gritty substances, and that a record produced from such a composition would be rough and noisy compared to a record produced with the patent composition of the patent in suit.

xQ. 113. You observe, do you not, that this composition of the Sanders patent is indicated as being for disk records, which are made by impressing, as you just now observed that the record of the Petit patent 683,979 was made by pressure?

A. Yes, I observed that this patent refers to disk records formed by pressure. It is possible, however, that a mixture of the natural iron oxide when pressed into the record surface might be smoother than if the same oxide of iron were incorporated in a molten mixture, such as the patent in suit.

xQ. 114. Is it a fact, speaking generally, that the presence of gritty substances, or relatively gritty substances, like chalk or fine precipitates, in a record composition that is to be used for casting records (as distinguished from applying pressure) does not give good results and is undesirable.

A. If the substance is not sufficiently fine, so that there would result gritty particles in the composition, I think it would be undesirable, but if the precipitate is extremely fine like lamp black, or certain forms of precipitated iron oxide, or chalk, it would be desirable providing they would not separate out, due

to their greater specific gravity. In case of lamp black, while it is of higher specific gravity than the wax, composition it is so extremely fine that it does not separate out and is not undesirable.

xQ. 115. Would a person skilled in this art be liable to employ in a composition to be used for casting sound records a substance that is manifestly gritty or relatively coarse in its particles?

A. A person skilled in this art might experiment with such substances, with a composition capable of being cast but I don't believe they would find the results sufficient to warrant the use of such composition.

xQ. 116. If a person skilled in this art had your ordinary blank composition and wished merely to harden it, and if he had before him two ingredients each of which would harden the composition and was apparently miscible therewith, one of which was relatively coarse or gritty, while the other was not; to which do you think he would naturally first turn?

A. If the relatively coarse and gritty substance were miscible, that is, soluble in the composition, I think he would be pretty apt to experiment on both of them before deciding.

xQ. 117. Which do you think a person of ordinary intelligence would attempt first?

A. If he had knowledge that the gritty coarse particles would remain as such after mixing them, he would most probably try the others first.

Answer objected to as not responsive.

xQ. 118. Will you please specify which method you employed in molding the records from compositions "B," "C," "D" and "E"?

A. In all of these compositions the process described in the patent in suit. I have reference to the Miller and Aylsworth patent described in the patent in suit.

xQ. 119. You refer to Miller & Aylsworth patent No. 683,615 dated October 1, 1901, in which the mold is dipped into a vessel containing the molten composition. Is the mold heated, or at normal temperature at the instant it is dipped into the molten composition?

A. The mold is somewhat warmer than the normal temperature at the instant of dipping.

xQ. 120. I am not asking as to what the patents describe, but inquire about what actually took place when making the records

from compositions "B," "C," "D" and "E." Was the mold allowed to remain in the molten material long enough to acquire anywhere near the temperature of that material?

A. The mold was left in the molten material two minutes, during which time it does attain somewhere near the temperature of the molten material.

Q. 121. The particles of the molten material that first come in contact with the surface of the mold meet a surface that is comparatively cold, do they not?

A. That is correct, compared to the temperature of the molten material.

Q. 122. Have you made any comparative tests of compositions "B," "C," "D" and "E" by molding records in a mold that was either previous to heating to about the same temperature as the molten composition, or that was subsequently brought to about the same temperature while the composition remained in the mold?

A. I have not, but it is my belief that the results would be essentially the same however they were molded, providing each composition received exactly the same treatment.

Adjourned until Friday morning, February 22d, 1907, at 10.30 A. M.

ORANGE, N. J., February 25, 1907.

Met pursuant to adjournment.

Present—Counsel as before.

CROSS-EXAMINATION of Mr. AYLSWORTH continued.

Q. 123. In answer to question 8, you speak of the property of the composition containing carnauba, namely that after being cast, it does not shrink perceptibly until it is solid and comparatively cooled, etc. Is this a property of carnauba when existing alone, as well as of the composition containing carnauba?

A. The carnauba alone would be impossible to cast successfully into a record, on account of its excessive contraction and warping. Carnauba wax when solidifying, shrinks to such a

40 large extent that fissures and cracks are formed in all directions. Especially is this true when it is suddenly solidified. I would expect that a mixture of carnauba wax and the blank composition, if the carnauba is used in considerable percentage, would develop extraordinary properties of shrinkage and that such mixture

might develop unfavorably for the purpose of casting the records. But, however, in experimenting it was found that the combination of carnauba and the blank mixture gave a most favorable result, and did not exhibit any of the extreme properties of shrinkage, which are inherent in the carnauba wax alone.

Q. 124. You evidently misunderstand my question and perhaps I have misunderstood your direct deposition. Am I correct in saying that in casting records from the composition of the patent in suit, the molten composition does not contract at a uniform rate continuously from the very moment heat is removed to the end; but remains in contact with the mold until it has become comparatively cool and solid, and thereafter shrinks radially sufficiently to clear the matrix-surface?

A. What takes place in casting a record from the composition of the patent in suit is as follows:

The molten material is chilled and solidifies on the surface of the mold, which is accomplished by either dipping the mold maintained at a relatively lower temperature than the composition, or by filling the mold with the molten composition and allowing the mold to come to the temperature of the composition, and then subsequently performing the congealing operation, by the application of cooling agents to the exterior of the mold, in both cases there results a solidified layer of the composition on the inner surface of the mold, which remains in contact with the mold and does not shrink therefrom until the solidity reaches a certain stage. Shrinkage, however, does take place from the time the wax first begins to solidify, but such shrinkage does not result in the shrinkage of the solidified material from the mold, but such shrinkage takes place in other directions. In the case of the dipped record before mentioned, this shrinkage takes place from the hot and more plastic inner surface of the cylinder toward the mold, that is, radially outwards. And, in the case of casting the record, whereby the mold is filled with the molten material, the first shrinkage takes place also from the inner surface of the cylinder radially towards the mold. Then, in both cases, when the inner part has solidified to such a point that it tends to resist its radial outward shrinkage, the record begins to shrink away from the mold.

Q. 125. That is very clear to me now, and it applies to the composition of the patent in suit, which contains carnauba. Now, disregarding the character of the mold, and disregarding whether or not you will get a good sound record from carnauba, without any other materials added, will molten carnauba by itself behave

the same way after shrinkage if treated by either of the two methods you have just set out?

A. I do not think that carnauba by itself will follow the exact phenomena of shrinkage which the blank composition and the patent in suit displays. As I stated before, I have always found it impossible to cast a record of the pure carnauba and unless that were done, it would be impossible to state just what would take place.

10 xQ. 126. If the blank composition by which I understand you mean the composition of the patent in suit minus the carnauba and lamp black, be treated in either of the two manners set out in your answer to xQ. 124, will it behave the same way as the composition of the patent in suit, as regards its shrinkage?

A. The blank composition in its phenomena of shrinkage is similar to the composition of the patent in suit. By shrinkage, I mean shrinkage from the mold in casting or molding records. But there are slight differences in this, which as I have before testified, result in quite marked differences as to the surface of the product. This I attribute to the fact that the composition of the patent in suit remains in contact with the mold longer, so that when it does shrink from the mold it is cooler and somewhat more coherent, which results in a cleaner molded surface.

xQ. 127. Why does the composition of the patent in suit remain in contact with the mold longer than the blank composition?

A. Just exactly why the composition of the patent in suit remains in contact with the mold longer, there is no absolute proof, but I attribute the phenomena as being connected in some way with the formation of the esters that result from the reactions of the carnauba with the wax composition.

30 xQ. 128. So far as you know, is there any wax composition to which a substantial amount (say 15%) of carnauba wax can be added, where the resulting composition will not present the same phenomena with regard to shrinkage as with the case of the patented composition? And, I am asking about the shrinkage patented composition? And, I am asking about the shrinkage only and not about the resultant sound record or other article.

A. Yes, there are many such compositions that will result in differences in shrinkage; for instance, a composition of stearate of lead, which is a wax-like material, when mixed with carnauba has the property of such excessive shrinkage that it leaves the 40 mold before the finishing operation can be performed and before the major part of the shrinkage has taken place. A mixture of carnauba, wax and asphalt, on the other hand, leaves the mold much slower, and in fact it is very difficult to remove a record

cast with carnauba and asphalt in the proportions mentioned in your question. In the first case, which I cited, is so much shrinkage takes place after the record leaves the mold that the indentations become very much blurred or rendered less sharp than those of the matrix.

xQ. 129. In xQ. 124, you name two methods of casting records, of which I understand the first to be that practiced by you in making the records from compositions "B," "C," "D" and "E" as set up in your direct deposition, is the second method named by you in xQ. 124, substantially that disclosed in Defendant's Exhibits "Macdonald Reissue patents 12,095 and 12,096" of March 10, 1903?

A. Yes, the method used in casting these compositions was the same as described in the first part of my answer to xQ. 124, and the second method described is similar to the method disclosed in Macdonald patent No. 12,095 reissue; in both cases, however, the results as to shrinkage take place in the same manner; that is to say, as far as the casting of the record is concerned the shrinkage must take place in the same manner.

xQ. 130. The Macdonald reissue patent No. 12,095 aforesaid, about line 77, of page 1, directs the application of cold water to the outside of the matrix. If the matrix contains your ordinary blank composition, or what I term the "Macdonald composition," what effect would this external application of cold water have upon the outer surface or rather upon the particles of the molten composition that are in contact and those immediately adjacent to the matrix-surface?

A. The application of cold water as you have described in your question would tend to produce a more amorphous layer of the same composition.

xQ. 131. What effect would this application of cold water upon the exterior convex surface have upon the consistency of that portion of the molten composition that is adjacent to the matrix-surface, that is as regards fluidity or becoming solid, etc.?

A. The application of cold water, as you have described in the question would result in solidifying the molten material onto the surface of the mold, and such solidification would proceed throughout the mass of the material.

xQ. 132. Would the mass of the material, that is the portion located nearest the axis as distinguished from the portion of the 40 blank composition that is adjacent to the matrix-surface, would that mass meantime be contracting or shrinking radially outward towards the portion already solidified by the application of the cold water?

A. Yes, it would continue to shrink radially towards the inner surface of the mold after it had solidified in its first stages, wherein it is very plastic.

Q. 133. If instead of adding carnauba to your blank composition to obtain the specific composition set out in your patent, you should add Bees' wax, would the resulting composition, if cast, by the dripping process, as described by you, behave in the same manner as to shrinkage as the carnauba composition?

A. The shrinkage phenomena would be similar, but, of course, in the case of bees' wax the proportions would have to be smaller than in the case of carnauba to get relatively similar results in the composition.

Q. 134. Why would you have to use less bees' wax to get relatively similar results in the composition?

A. Bees' wax toughens the composition, but if added in as large a percentage as the carnauba, I think on account of its more sticky nature it would be not so satisfactory.

Q. 135. It seems then that if we employ bees' wax instead of carnauba in the patented composition, we have to take less bees' wax. What effect would this smaller amount of bees' wax have upon the composition with regard to limpidity, smoothness of texture and brilliancy of surface and hardness?

A. It would have all of the desirable effects of the carnauba.

Q. 136. Would this smaller amount of bees' wax render the blank composition harder?

A. It would render the blank composition harder in the sense that the records would wear better than the blank composition without the bees' wax. The high price of bees' wax, however, has rendered it unnecessary for us to go into the merits of this substance very extensively.

Q. 137. Do you regard bees' wax as a hardening ingredient for the blank composition; and if so, why did you not include it in the list given in answer to Q. 39?

A. I regard bees' wax as being a hardening substance if used in small quantities, in that it toughens the material, so as to produce a better wearing surface. It is, however, in itself not a bees' wax was not mentioned in the list you refer to, that list does not attempt to include all of such substances, and bees' wax is one of the substances that has been overlooked in making out this list.

Q. 138. In answering Q. 16, you state that the foggy appearance or roughness, which you observe as characteristic of the

records you "dipped" from the ordinary blank composition, was present in the records dipped from your patented composition ("E") in a few instances only. How do you account for this roughness or fogginess in those few instances where you employed the patented carnauba composition and the dipping process?

A. They might have been due to the molds not being perfectly clean, and I think that explanation accounts for it, because in our regular manufacture of this composition, there is very seldom any of this foggy effect.

Q. 139. Your explanation is a conjecture, is it not?

A. The explanation is founded on observation, but as regards this particular instance, I did not investigate it so as to determine with exactness that such was the case.

Q. 140. You have explained the absence of fogginess in the records dipped from the carnauba composition, by stating that the material does not leave the matrix-surface until it has already become solid and set, so that it retains a sharper and more faithful impression. In answer to Q. 26, 131-132, you say that if we employ your blank composition and apply cold water to the exterior of the mold, the composition in that case will become solidified onto the surface of the mold, and the mass of the composition would in the meantime continue to shrink radially towards the surface of the mold, after it had solidified in the first stages. And, in answer to Q. 6, you have said that the surface of the ordinary blank composition is "very smooth." Are all these statements true and correctly stated by me; and if so, could you not obtain from the ordinary blank composition by applying cold water to the exterior of the cylinder, sound records whose surface would be free from cloudiness and fogginess?

A. I have not practiced the exact method which would be involved in your question of subjecting the mold to cold water, but it is my opinion that if such procedure did accomplish the result of making the surface free from fogginess and a perfectly smooth surface, that the application of such excessive cooling would result in stresses in the record which would cause excessive warpage and possibly breakage.

Mr. Massey—All after "cold water" objected to as incompetent and as volunteered.

Q. 141. By "runout," one of the headings in your table in answer to Q. 60, do you mean that the record groove itself has not been retained in the cylinder; or do you mean something else, and if the latter, what?

A. By "runout" I mean a distorted groove, due to warpage; this may come from the record coming loose from the mold first on one side, and then later, from the other side, which causes the effect of one side being contracted more than the other side, and this leaves the record groove somewhat curved or out of its true course.

Q. 142. That is, instead of the successive convolutions of the record-groove constituting a perfect helix, with the same distance between the convolutions, some of the latter are shifted longitudinally of the cylinder, and lie too near to (or too far away from) the next convolution?

A. Not exactly: the effect would be more that of having on one part of the record, say 100 threads to the inch, and on another part of the record, say 99 threads to the inch, also various distortions, such as might be illustrated by the grain in a piece of wood.

Q. 143. How many of the 66 records noted at the end of Q. 65 as being "Not Round and Run Out" were run out only, how many were "not round" only, and how many were subject to both conditions?

A. It is my recollection that they were approximately equal, although, in many cases both defects were noticed in the same record. These defects are so co-related that they were put under one heading, but if desired the number due to each effect can be produced.

Q. 144. If you can do, I would like the figures; and also the corresponding figures for the 23 of Formula "C," the 35 of Formula "D" and the 40 of Formula "E," that were observed to be "Not round and run out"?

A. I will produce these at the next session.

Q. 145. Is the fact that more or less specimens from each of the four compositions were "cracked and broken," or had "Chipped Edges," or were "Broken in Handling" indicative of any difference in the limpidity of the respective compositions when molten?

A. No, these defects are more indicative of the brittleness of the composition, but as I have before testified those figures do not represent with mathematical exactness the brittleness of the composition, because in operations of this kind the product is handled during the various stages by different operators, but they are a very fair indication of brittleness, and if many thousand were made, whereby the human element would be averaged so as to become negligible, it would indicate with almost mathe-

matical certainty the more or less brittle nature of one composition over the other.

A. But the word "No" objected to as volunteered.

Q. 146. Are the facts recited in the previous question indicative of the presence of more deleterious decomposition products in one material than in the other?

A. If there were present in the composition, deleterious substances which would cause brittleness more in one instance than in another, then these results would be indicative of more deleterious substances in one case than in the other.

Answer objected to as not responsive.

Q. 147. Are the facts referred to in Q. 145 indicative that any of the four materials has a finer texture or a smoother surface than any other or others of the four?

A. If the fine texture is indicative of increased strength of the material, which I believe to be the case, these results would be indicative that there was a finer texture in one case than in another. As to the latter part of your question regarding the surface, these results would indicate nothing as to the surface of the material.

Q. 148. That is, the figures required of in Q. 145, do not indicate that the records from one material are more free from fogginess than those from any other?

A. As I have stated in my previous answer, the surface of the material would have no effect on the number of records "Cracked and Broken" or "Chipped Edges."

Q. 149. Do the facts referred to in Q. 145 give any indication that one material is more hygroscopic than the other?

A. The facts referred to have no bearing on the hygroscopic nature of the material.

Q. 150. The figures under the headings referred to are to be attributed solely to the personal equation of the various workmen handling the article, and to the relative toughness and brittleness of the respective compositions?

A. The figures given in those columns, I should say represented in a large measure the comparative brittleness of the various compositions, but that on account of the human error they do not indicate this with mathematical certainty; that is to say, one composition might have a few more records broken accidentally in handling than would affect the results slightly.

Q. 151. Of the 93 records dipped from composition "B," 18 were subject to the objections enquired of in Q. 145. How many of these mishaps were due to careless handling alone, how

many were due to their inherent brittleness or want of toughness alone, or how many were due to both factors?

A. In the composition "B" I know that two out of the 18 were broken in handling, but as to the number in this composition and in the other compositions aside from these two mentioned that were broken, due to accident or handling, no record of the breakage due to handling as distinguished from that due to the brittleness of the composition was kept. The operators, however, who did the work on these records handled them all very carefully and the percentage due to accidental causes was in each case extremely small.

Q. 152. I notice of the 93 records of Composition "B," 16 whose defects were not due exclusively and explicitly to careless handling, that is about 17% were cracked and broken or chipped; and in the same way there were 14 of the 86 records of composition "E," or 16% about. Would you assume from this that composition "B" was about of the same toughness or non-brittleness as composition "E"?

A. While I have not figured the percentages indicated in your question, they appear to be about right and as to the brittleness would indicate that the composition "B" and composition "E" were about equal in this respect.

Q. 153. Composition "D," which you have taken as being substantially defendant's composition, shows 26 losses out of 95 records, or about 27% (as against 16% and 17% for "B" and "E"), although composition "D" contains both casing and carnauba in substantial quantities. Do you conclude from this that the toughness or non-brittleness of the patented composition is to the same quality of defendant's composition as 27% is to 16%?

A. Adjourned to Tuesday, February 26th, at 10 A. M.

ORANGE, N. J., Feb. 26, 1907.

Met pursuant to adjournment.

Present—Counsel as before.

CROSS-EXAMINATION of Mr. AYLSWORTH continued.

By Mr. Dyer—Counsel for defendant is informed that the matter called for in xQ. 143 and xQ. 144 will be produced in connection with the depositions of other witnesses by whom the figures and calculations were made.

By Mr. Massie—Am I correct in understanding that all the figures given in the table in the answer to Q. 60 were given to the witness by other parties, and so far as this witness is concerned is secondary evidence.

By Mr. Dyer—Counsel for complainant suggests that the information can be obtained from the witness, rather than from counsel.

xQ. 154. I call your attention to the table appearing at the end of your answer to Q. 60. Please indicate which of these figures are given of your own knowledge and are not merely reports given to you by the various inspectors?

A. The figures given in this table were taken from the inspectors' reports, who inspected these records without any instructions as to what they were, but were told to give them the regular inspection, such as they give the regular work in their respective departments. These inspectors are skilled in this line of work and follow it daily. I personally witnessed the inspection as regards the first four columns, but those of the fifth column, namely "not round and run out," which were done in Mr. Payne's Department were not personally witnessed by me. I will here state, however, that the items of this column are usually inspected by Mr. Sturms, though not so strict an inspection is practiced in his department and since we had decided to give these records the final master inspection, the matter of "not round and run out" was omitted in Mr. Sturms' inspection. The results of the first inspection were gone over very carefully by Mr. Holden and myself; that is, we examined the discarded records to see the defects. I also examined some of the discarded records under the column of "not round and run out" and satisfied myself with the correctness of the inspection.

Q. 155. Will you please answer xQ. 153, which is now shown you?

A. In regard to this comparison which you have stated in xQ. 153, the apparently abnormal percentages shown between compositions "D" and "E," I should say were not altogether in this instance due to the brittleness of the composition, but rather accidental. The results of the figures, however, taken as a whole comparatively are additional proof to me of the properties of these compositions which I know from long experience differ in their physical properties as to brittleness; that is, from other experiments which I have made in the past and physical tests to which I have subjected these compositions, that these figures are all in agreement with each other as to the differences in these compositions.

“Q. 156. I understand from your answer to rQ. 154 that the results of the first four calumns were gone over very carefully by you, to the extent that you examined the discarded records to see the defects. Did you likewise examine all of the records of the four compositions that were not discarded in order to see whether any of these might show defects?”

A. Yes, I looked over the finished or perfect records as well as the discards, and the further correctness of the inspection was checked by the second or final inspection in Mr. Payne's department.

10 “Q. 157. Did you take part in that second or final inspection?”

A. I examined some of the records to satisfy myself of the correctness of the inspection, but did not take part in the actual inspection.

Reference to the second inspection is objected to as hearsay and incompetent.

Reserving for the present the right to object to the table in question as being secondary evidence until after the inspectors have testified, defendant's counsel now objects to the said table as untrustworthy and misleading, because it does not appear what number of discarded records of each kind were defective on account of causes not inherent in the compositions.

20 “Pending the introduction of the figures distinguishing between “Ran out and not round,” defendant's counsel will have to withhold further examination on the tests made by this witness.

“Q. 158. Will you please describe what you did in making the simplicity tests referred to in answer to Q. 4, telling us for instance, which composition you tested first, how you made the observations, how long it took in each case, size and dimensions of the funnel, etc.?”

30 A. I do not have the figures for the size of the funnel which you call for in your question, but will produce the funnel which I used for your examination. What was done was the following:

“About 8 lbs. were melted in a pot by the aid of a gas burner having very careful regulation, so that the temperatures could be maintained at the desired point. The experiments were made jointly by Mr. Holden and myself; Mr. Holden doing the timing by a watch, and I called the time of starting and time of finishing in each instance. In doing this the funnel was first submerged in the molten composition sufficient time for it to become heated to the temperature of the composition, then lifted out quickly and

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emptied by inverting, and then placed so it would float on the composition, and the exact instant when it floated was called off to Mr. Holden, and the exact instant when the funnel disappeared below the surface was called off to Mr. Holden. The composition first tested was composition “D.” These experiments were made with these compositions at two temperatures; that is, a temperature not far above its melting point, and at a temperature considerably higher than the melting point, so as to get the fluidity at different temperatures.

“Q. 159. The tables of this test which you have just handed me showing the different temperatures and elapsed times, from which you have taken the averages, show do they not, that there is no absolute relation, in specific instances, between the temperature and the time required for the funnel to sink; that is, for instance, with the first three tests with composition “D,” at the same temperature you get three different time periods, 1 minute and 9 seconds, 1 minute and 24 seconds, and 1 minute and 11 seconds respectively,—although all were at supposedly the same temperature?”

A. In making determinations of this kind, it is not like working with an instrument of precision, such as a micrometer, and there are, of course, small differences in the results, to overcome the effect of which a sufficiently large number were tried to strike a fair average. The results are on a whole more concordant and exact than I believed was possible. The average results I consider to be absolutely accurate criterions of the fluidity of the composition at the average temperature of the experiments in each case. It was my intention to make these experiments more extended before these tables were introduced. The results are, of course, comparable with each other, but I expected to make a further test with the same apparatus with other fluid so as to further compare the fluidity of these compositions with, for instance, water as a standard.

“Q. 160. There has been some discussion as to whether it is toughness or hardness or both, that causes the cast records to wear longer; and there is some question also as to whether or not the continuing high temperature produces a chemical reaction; and concerning the effect of the continued high temperature in eliminating deleterious decomposition products. But you agree with us, do you not, that whatever names be given and whatever 40 scientific explanation is offered, if a substantial amount (say 15%) of carnauba wax be added to your ordinary blank composition (which we called “the Macdonald Composition”) and a

comparatively high temperature (say 450° F.) be maintained for a considerable time (say four or five hours), we get a composition that is free from deleterious decomposition products; and we get a composition from which we can cast records that will wear longer, under reproduction on a phonograph, than records cast from the ordinary blank composition aforesaid?

A. As to whether the composition you have described containing about 15% of carnauba, heated to a high temperature, say 4 or 5 hours, is entirely free from decomposition products, depends more on the selection of the materials and their proper filtration, and does not follow entirely from the method of making the composition, wherein the high temperature is maintained for the time specified. I agree that such composition has the properties of wearing better than the blank composition. I furthermore know with absolute certainty that the property of better wearing is not due to the simple heating of the composition to the high temperature for the time mentioned, wherein there are no reactions such as we know take place in the composition containing carnauba, for the reason that the blank composition, when so heated without the carnauba does not produce the result of good wearing.

20 Q. 161. If I add to the questioning part of xQ. 160 the condition that all materials have been selected with the utmost care, that they have been purified as far as it is possible to do so, and that the resulting composition is filtered with utmost care, then will you agree to the proposition that we get a composition that is practically free from deleterious bodies, and that records made by casting therefrom will wear longer than those made from the regular blank composition?

A. If the compositions are made with materials that are selected with the utmost care, I would consider that the compositions would be free from deleterious substances but whether they are free from deleterious substances or not would have very little effect on the wear of these two compositions; that is, in every case in which I have experimented with the carnauba composition in comparison with the blank composition, the wearing of the composition containing the carnauba has shown up very much more favorably, no matter whether it was a rough experiment wherein the materials were not particularly selected as to freedom from deleterious substances, or not.

40 Q. 162. Is your answer to xQ. 161 "Yes;" do you answer the question in the affirmative?

A. I think your question calls for an explanatory answer, such as I have already given, and could not be answered by simply yes or no.

xQ. 163. I will divide the same inquiry into two portions. And first, can you say yes or no to this question; If we exercise the greatest care in selecting the materials, and if we resort to filtration with the greatest care, and if we add to your ordinary blank composition about 15% of carnauba wax, and maintain the mixture at a temperature of about 450° for four or five hours, will the resulting composition be free from deleterious bodies? Can you answer this question yes or no?

A. If we select all of the materials with a view of eliminating deleterious substances, I think that the resulting composition would be free from such substances unless the products of reactions might develop something injurious which to my knowledge does not occur; that is, does not occur and leave any deleterious substance in the finished composition.

Q. 164. It seems to me that you have gone out of your way to add to the conditions stated by me, another condition which to your knowledge is not present. Can you not answer the question yes or no?

A. I cannot answer with such a positive answer as yes to this question, for the reason that absolute freedom from such deleterious substances would be impossible to attain. No matter what care were taken in the selection of the materials there is the possibility of some traces of objectionable substances being in the material, but I should say that it would be practically free from deleterious substances if such care as you mention in your question were taken.

xQ. 165. Then, for all practical purposes and speaking practically, your answer to xQ. 163 is in the affirmative?

A. In the practical sense, I think that is correct.

Q. 166. Second, would records molded from the composition made of the materials and in the manner stated in the xQs. 160-164, be more durable under the wear tests, than the records made from the ordinary blank composition? Can you answer this question yes or no?

A. If I understand your question correctly you ask whether or not the composition containing carnauba wax and heated to a temperature of 450° for four or five hours, in other words, the composition of the patent in suit, is more durable as to wear tests than the blank composition. My answer to this under the above interpretation of the question is most positively, yes.

40 Q. 167. You have correctly understood the question. I will now combine the two inquiries as in xQ. 160: If you take the materials indicated in xQs. 160-164, and treat them as indicated

in the same xQ_6 , will the resulting composition be practically free from deleterious products of decomposition, and will the records moulded therefrom be more durable under the wear-tests? Can you answer this question yes or no?

A. Assuming that the reactions between the carnauba wax and the material of the blank composition are entirely completed, I should answer in the affirmative.

Answer objected to as not responsive, since it assumes that "reactions" are taking place, whereas the original question (xQ_6) is neutral as to such assumption.

xQ_168 . If instead of saying that the high temperature is maintained for four or five hours, we make the question more specific and say that the high temperature is maintained until all foaming off or frothing of the carnauba composition has ceased, then can you answer xQ_169 in the affirmative?

A. Your amended question, substitutes a part of the evidence of reaction and is otherwise the same as the first question, and consequently my answer would be the same, that is, yes.

xQ_169 . Is complainant's exhibit, Early Columbia Molded Record, one whose record-groove has "run out" as that term has been used by you?

A. I have not examined the particular record of which you speak, as to how much of the record-groove is run out, but I can very soon determine this point by trying this record on a phonograph.

xQ_170 . I understand your testimony to be that this particular record is "not round." Will you please be good enough to test this exhibit on a phonograph and report whether or not its record-groove is "run out"?

A. At this point a recess was taken for the purpose of enabling the witness to make a test of the record in the presence of counsel for both parties, as requested in the preceding question. The witness continues his answer to the question.

A. Upon testing this record in the presence of counsel, I find this to be a most characteristic example of both "out of round" and "run out." Such a record as this one would be of no commercial value at the present day.

xQ_171 . Do I understand that the various records noted in your table at the close of your answer to Q_60 as being not round and run out, were as an average no more so than this particular record, "Complainant's Exhibit, Early Columbia Molded Record"?

A. It is my recollection that some of the records made of the blank composition were even worse than this one, but with the other compositions mentioned in the table where they were discarded for "not round" and "run out" they were not as bad as this one.

xQ_172 . Do you observe on this article "Complainant's Exhibit, Early Columbia Molded Records" any indications of deterioration, due to hygroscopicity?

A. I observe on this record by holding it in the light a damaged surface, but whether it is due to hygroscopicity or not, I cannot state off-hand. This record has been kept in a carton box, which would of course protect it from damage due to hygroscopicity, even if it were prone to such an effect.

xQ_173 . Do you observe on this same exhibit any other indication of any break-down of the material, efflorescence, moldiness, or similar injury?

A. I observe whitish streaks in the record-groove, which has the appearance of an imperfectly molded surface, but not that of moldiness or hygroscopicity.

xQ_174 . These "whitish streaks in the record-groove" I do not seem able to detect with my eyes; they are not very conspicuous, are they?

A. When held in the sunlight at the right angle they are quite conspicuous.

xQ_175 . Was this record played, that is reproduced, through out from end to end, in the test made just after xQ_170 ?

A. It was, but I noticed this same appearance before the test was made. In fact, playing a record, over would not make the effect noted. In a wear test a breaking-down of the record is noticed, but it gives a different appearance from this.

xQ_176 . In listening to the reproduction of this exhibit record just now, did you observe whether or not the machine failed to reproduce the selection, or at any portion of the selection?

A. I did not notice that the machine failed to reproduce the record, but I did notice that the reproduction was very imperfect and rough. Such a record would find very few customers today; that is to say, in the present state of the phonograph art.

xQ_177 . What do you mean by "imperfect and rough"?

A. I mean by "rough," a comparatively rough surface which produces foreign noises, which do not form a part of the sound record. By "imperfect," I mean the wobbly or jerky sound, due to the irregular or non-concentric cylinder, which is undoubtedly caused by the distorted record-groove.

Q. 178. Is it your testimony that the reproduction of this selection sounded wobbly to you?

A. Yes, I could tell from listening to the record without seeing it that the record was one of the kind which we call "run out."

Q. 179. Is the "roughness" that you say you observe, due to the "not roundness" and the "run outness," or would you attribute it rather to the nature of the composition, the condition of the mold in which the record was made and the manner of making the record?

A. I would consider the roughness noted as being caused by inferior making properties of the composition, in other respects than the defects due to warpage.

Q. 180. Was the test following Q. 179, made on a regular phonograph?

A. It was made on a regular phonograph supplied with a regular reproducer, supported not by the regular arm, but so arranged that the reproducer could move and adapt itself to wide eccentricities and indicate the same by a pointer fastened thereto. This instrument is what we call our regular thread testing instrument, and while indicating defects due to shrillings, it also reproduces the record in the same manner as the regular phonograph.

Q. 181. What sort of a horn did you use?

A. There was no horn used in this test, the defects were sufficiently marked to be audible without the magnifying aid of a horn.

Q. 182. The "pointer" fastened to the reproducer was some six or eight inches long, was it not?

A. The pointer was about six inches long and made of a very light strip of bamboo, and being flexible it does not move as a whole with each sound vibration, but only indicates the large irregularities, amounting to a large fraction of the circumference of the record-groove. This instrument exerts such light pressure on the record that master records from which molds are made can be tested on it without injury to the same. By "master records" I mean molded masters, from which additional molds are made.

Q. 183. Does the moving or the mere flexing of this pointer tend in any extent to "dampen" or retard the movements of the reproducing-stylus?

A. It may have some slight dampening effect.

Q. 184. What effect would this dampening effect have upon the audible reproduction?

A. If there were no irregularities such as would cause the needle to violently fluctuate, it would not cause any notable effect in the reproduction of the sound; that is to say, if the records were perfectly round, the reproduction would not sound wobbly with this instrument.

Q. 185. The question is repeated.

A. The sounds would not be as loud and clear.

Q. 186. Are you uncertain in your own mind whether it is the carnauba or the lamp black, which, in your opinion, imparts antiseptic properties to the composition? (Q. 31.)

A. Yes, I do not know positively whether this property is due to the carnauba or the lamp black, as no specific experiments were tried to determine this point, but the observation is based on the lack of complaints with the composition containing carnauba. In other words, we have had no complaints from this cause since using this composition. I should, however, after due consideration of my recollection of what was done in the early stages of the manufacture of the molded records and the carnauba composition conclude that the carnauba ingredient was chiefly contributory to this effect, because in the earlier records that were put on the market, the lamp black ingredient was not used. The material in this case was colored black by crude osokerite.

Q. 187. If your conclusion be correct would it not follow that whenever carnauba is combined with these wax-like phonograph compositions, it imparts more or less of its antiseptic properties?

A. Yes, I would conclude that it would contribute these effects, but not having tried it specifically, of course, I could not make a positive answer. Of course, the materials or compositions, which were put on the market were those made according to the patent in suit, and the properties noted might be contributed by the reactions which take place in making a composition.

Q. 188. So that if it should prove to be the fact that no reactions take place to any appreciable degree in making the composition of the patent in suit, your present conclusions are to that extent to be thrown out?

A. If such a condition were proved I would, of course, alter my conclusion on this particular question of antiseptic properties.

Q. 189. In one of the companion suits, on Macdonald patent No. 666,723, I think, in which the Graphophone Company is complainant, my recollection is that in testifying about records made from the composition which you are now terming your record black composition, you stated that in the beginning, there were

complaints that these records were developing signs of mildew or mold; that you visited the customer or customers who made such complaints and found that they were keeping your records in damp cellars; that you instructed the parties not to do this; and that thereafter there were no further complaints on this score regarding the records put out by your company of that old composition? I have not now before me the testimony in question; but would ask you if the foregoing questions are correct?

A. I recollect the testimony to which you refer and the particular customer referred to was a concern in Easton, Pennsylvania. There were many other complaints but they were scattered here and there all over the world. Some of the most serious specimens of this complaint I recollect came from Bombay, India. However, the disappearance of the complaints due to this defect came at the time the new records of the patented composition were put on the market.

Q. 190. That is to say, the former composition developed by you and which your company was using during the early nineties and before your carnauba composition, was developed, whatever that earlier composition was, would not keep without mildewing unless great precautions were taken?

A. No, that is not exactly right. The mildew effects would take place with those earlier compositions if such compositions were exposed to the germs and influences and surroundings which cause mildew to develop. Many records made from these compositions and without any special effort to protect them were kept for a long period of time without developing the mildew effect. As a matter of fact this mildew effect was only produced in certain localities, where the temperature conditions and contributory causes existed.

Q. 191. Was it evident a priori before you produced your patented carnauba composition, that sand, sawdust, plaster-of-Paris etc., if added to your regular blank composition would render the surface of the composition unduly rough?

A. It is not at all apparent what the effect of a mixture of such substance would have in a *molded* record, without first trying the experiment. If we were dealing with a blank composition, however, it would be very apparent that such admixtures would be undesirable.

Q. 192. That is, when you set out to develop your patented carnauba composition, you did not even have so much as a guess that the presence of sand in that composition would tend to render its surface rough?

A. Yes, I might have guessed that it would result in a rougher surface, but without trying the experiment I would not know and furthermore, I was endeavoring to not only secure a material that would be hard and smooth, but also one that would have the desired molding properties, and as to whether or not these substances would effect the molding properties favorably or otherwise would have to be determined by experiment.

Q. 193. Do you not think that any man of ordinary intelligence, to say nothing about the persons "skilled in this art," would likewise guess that sand would render the surface of your regular blank composition rough; and would he not also guess that he could not melt the sand at the temperatures that these other materials can stand without being fused?

A. The man with ordinary intelligence might conclude that sand and sawdust would make a record rough, whereas, one skilled in the art might see and reason that the particles of sand or sawdust would not project beyond the surface of the groove of the record, and would on account of such reasoning try the experiments before discarding it. And, as to the effect of the melting of the same, of course, that would be obvious to any one who might experiment with such materials, that if sand were used it would be a mechanical mixture with the composition. However, the fact that it did not melt would prevent one from trying it as a mere mechanical mixture.

Adjourned until Wednesday morning, February 27, 1907, 10 o'clock.

ORANGE, N. J., February 27th, 1907, 1 P. M.

Met pursuant to adjournment.

Present—Counsel as before.

CROSS-EXAMINATION of Mr. AYLSWORTH continued.

Q. 194. Before you developed your patented carnauba composition, was stearate of soda known to be hygroscopic?

A. Yes, stearate of soda was known to be hygroscopic.

Q. 195. Was it known that asphalt, gutta percha, rosin, etc., did not have sufficient shrinkage as compared with the compositions suitable for molding records.

A. It was known that asphalt, rosin and gutta percha by themselves did not have sufficient shrinkage, as known by my experience.

Q. 196. Do you believe that this information was known to other persons skilled in the art at that time?

A. I have no knowledge of what was known to other persons.
 xQ. 197. What special advantages, if any, over prior compositions does your patented carnauba composition have as material for original phonographs, other than greater toughness or hardness?

A. I know that compositions containing carnauba were not as satisfactory as a recording or blank composition, for the reason that there was more scratchy noises in records made with the carnauba compositions.

xQ. 198. What advantages, if any, does your carnauba patented composition have over the other earlier compositions for making nodded cylindrical records by the process of pressing?

A. I have not experimented with this composition using it by the method of molding by pressure, as stated in your question, and therefore can give no positive information of records made with this substance by that method.

xQ. 199. What advantages, if any, does your patented carnauba composition present in molding records by the process which is substantially set forth in the Macdonald reissue patents, 122,995 and 122,996, in which cold is applied to chill the casting from the exterior, other than greater wearing qualities?

A. While I have not cast records in the exact manner specified in the patents you refer to, the operations of this method are so nearly identical in principle and effect, with the methods practiced in the Miller and Aylsworth patent sued in the patent in suit, that I believe the same advantages which I have found this composition to possess in the latter process, do also take place in the former process; and furthermore, from the character and appearance of the records which defendants in this suit first put upon the market, in which the defects noted in my previous testimony are apparent, that outside of wearing advantages, the advantages of molding with a more or less degree of freedom from undue warpage as compared to the blank composition is refuted by the defendant when using the patented composition referred to in your question.

Reference to the "effect" of the process inquired of is objected to as incompetent, because the answer states that the witness has not practiced that process.

xQ. 200. What effect with regard to hardness or toughness would be produced if you employed stearic acid with your regular blank composition (with or without lamp black), in place of carnauba wax?

A. There is already present in the blank composition stearic acid in excess of that necessary to form a neutral compound with the basic constituents of the composition, and the effect of adding more stearic acid would possibly tend to harden the composition, but on account of its crystalline nature, and the lack of toughening qualities which my experience with mixtures containing more stearic acid; that is to say, considerable percentages more than already contained in the blank composition, while they would somewhat harden the composition, would not materially increase the wearing substance of the same.

xQ. 201. Did you try this experiment?

A. I have not tried the experiment of wear on the phonograph with that composition, but I have made such composition and it was so apparent from the way the material acted upon cutting with a penknife that it was considered unnecessary to try it further.

xQ. 202. Were you surprised at the results just referred to, or were these results more the nature of confirming what you had anticipated?

A. The results referred to came in the regular course of experimenting, and I do not remember that I was particularly surprised, or that I had anticipated the result. I would state right here that when one tries to anticipate the results of mixtures of organic substances he is pretty sure to miss the target in most cases.

xQ. 203. Am I correct in understanding that your work which led up to the developing of your patent carnauba composition consisted in a regular methodical examination and test of each and every ingredient and mixture of ingredients that seemed at all promising, applying to the same a similar, regular and methodical manner, all the various processes, (including temperatures) that occurred to you as being promising?

A. I think that my work was more or less methodical. I was after certain properties in the composition and did not allow myself to be guided altogether by theory as to the anticipated effects with the substances and mixtures that the same might produce, but rather allowed myself to be led by the actual results of experiments, and I know that in these experiments and in experimenting generally I frequently try mixtures and experiments which would seem more or less absurd, if the certain (i.e. already recognized) properties of the substances were to be considered as imparted to the results.

xQ. 204. As a matter of fact, after you had produced your

carnauba composition, that is after it was patented, did you at once desist from further experimenting; or did you complete the range of examination that you had undertaken?

A. We considered this material to fill all the requirements and decided to adopt it as the regular composition for the reproduction, or rather for the molding of records, but, however, all experiments did not then cease; even up to the present time I occasionally experiment with, try and improve the record composition.

10 *Q.* 205. Is your company still using the composition set forth in your patent in suit prepared in the manner therein described?

Mr. Dyer—Question is objected to as improper cross-examination and the witness is instructed that he need not answer any questions tending to disclose factory operations or processes.

Defendant's counsel considers the instructions just given to be pretty broad.

A. I refuse to answer under advice of counsel.

20 *Q.* 206. When you first added carnauba wax to the composition described in the Macdonald patents No. 666,725 and No. 626,729, how much carnauba did you employ; what proportion?

A. I did not experiment with the composition of the Macdonald patent referred to in your question, but experimented with our regular blank composition, which is practically identical with the composition mentioned in the Macdonald patents, and which the Edison Phonograph Works had placed on the market many years, before the applications for the Macdonald patents were filed. In these experiments I used our blank composition in combination with carnauba wax, both at the low temperatures, which it is

30 usual to mix, and also in the manner disclosed in the patent in suit, in both of which cases, entirely new compositions were realized, and which had not to the best of my knowledge been made before. In these experiments the proportion was essentially that disclosed in the patent. I, however, experimented with different proportions and as a result of these experiments considered the proportions disclosed in the patents to be most desirable as to properties of the composition, aside from the matter of cost of the material.

40 *Q.* 207. In the first part of your answer to *Q.* 41, you said it was difficult to mold even a blank from compositions which contained much carnauba. What percentage of carnauba did you there refer to?

A. The mixtures which I referred to in the answer to *Q.* 41

were mixtures of carnauba wax with ceresin and bees' wax and other natural waxes, and it is my recollection that when the percentage exceeded 20 per cent. that the difficulties were very great, but we were able to mold them, that is blanks, using as high as 30 per cent.

50 *Q.* 208. Near the end of your answer to *Q.* 38, you say that (before you had produced the patented composition) you had been perfectly familiar with the properties of carnauba for more than ten years. What were the properties of carnauba which were at that period well-known to you?

10 *A.* That it one of the harder materials that is fusible and available for experiment, that it had very great shrinkage as compared with other hard substances such as shellac, rosin, copal gum, asphalt, etc.; that it was not miscible generally with every other substance, which I had available to experiment with; that it had the effect of communicating to such substances as it was miscible with, very excessive shrinkage and warpage; and also, that in a crude state it was more or less impure and contained particles of apparently powdered bark from trees and water; so that when melted it generally spit like grease when water is added to it for a short time until the water was expelled.

20 *Q.* 209. Were these facts known generally at that time to persons skilled in the art?

A. I can only answer as to what I myself knew, but, however, the material was obtainable in the market and I would presume it would be known to others if they had experimented with it.

30 *Q.* 210. What was the known method, if any, of purifying carnauba wax?

A. In the early days we purified it by melting to drive off the water and filtering. Later, however, when manufacturing the composition of the patent in suit, we first washed the material with boiling water, and then after deaerating or separating the wash water from the wax which floated on top, we melted and boiled off what water remained and filtered the resultant wax.

40 *Q.* 211. Without disclosing any matters of confidential nature, will you please explain how you became familiar with the properties of carnauba wax, during the past ten years or so; that is, for what purpose you were using it or experimenting with it?

A. Previous to the making of the composition of the patent in suit, my knowledge of carnauba wax was obtained by familiarity 40 with the composition which was used by Mr. Edison in the early days of the phonograph for making blanks, upon which records were engraved by the cutting action of the stylus, and by my own

experiments in the attempt to produce compositions for that purpose.

Q. 212. Referring to your answer to Q. 208, where you say that carnauba was not miscible generally with every other substance which you had available to experiment with, with what classes of substances was carnauba known to be miscible?

A. It was known to be miscible with the true waxes of similar nature to carnauba wax and with what is known as the true mineral waxes; there were, however, in the realm of wax-like substances, many substances which experiment had taught me that it was not miscible with others, such as certain naphthalts, shellac and copal gum.

Q. 213. What reasons, if any, had you to believe before you produced your patented carnauba composition, that carnauba wax would not be miscible with stearic acid? I mean, with commercially pure free stearic acid, that I understand consisted of mixtures of stearic and palmitic acid.

A. I had previously found out by experiment that carnauba wax was miscible with stearic acid.

Q. 214. The first portion of the Aylsworth patent in suit contains a long enumeration of the qualities which the composition should possess. In connection with Q. 203, I will now ask you if before you undertook the investigation which ultimately led to the production of your patented carnauba composition, you had already formulated more or less succinctly, either mentally or otherwise, a list of these desirable qualities?

A. It is my recollection that I appreciated a part of the properties necessary in order to successfully cast a moulded record, and that these views which I had on this subject were susceptible to change as developed by observation during the experiment. The one thing which I recollect was foremost in my mind as to the properties necessary was the molding property of the material. I had not been able previous to the discovery of this composition to mold any other composition successfully; that is as a moulded record, although many attempts had been made with various substances, and I further recollect that it was only after making the composition that its superior wearing properties were found out. That is to say, that particular feature of the composition had not been forecast by me.

Q. 215. Before you produced your patented carnauba composition, what reasons, if any, had you for supposing that carnauba (while imparting to the composition the desirable properties which it might be supposed to impart) would at the same time

destroy or appreciably diminish other desirable properties which you deem essential for casting a sound record?

A. Knowledge of the extreme warpage and shrinkage of carnauba wax would and did cause serious doubts as to the utility of experimenting with carnauba wax for this purpose, and its desirable properties were rather the result of accident than observation in experimenting with carnauba wax in combination with the blank composition.

Q. 216. That is, in your previous observation of the manner in which the carnauba wax without other ingredients would act to on cooling?

A. That is the manner in which carnauba wax in combination with stearic acid and other materials, and also carnauba wax alone, acts on cooling, whereby phenomenal shrinkage is made apparent by warping and by cracks and fissures in the resulting composition.

Q. 217. Then it is not true that the presence of carnauba wax in a composition with which it is miscible has the effect of materially reducing any tendency to warpage?

A. With the particular composition of the patent in suit, it does not have the effect which is a contrary effect to what one would expect, having a knowledge of the abnormal shrinkage and warpage as referred to in my previous answer. In other words, it is true that the presence of the carnauba wax does act favorably towards undue warpage and shrinkage of the records cast or molded from the patented composition.

Q. 218. If you take the ingredients named in your patent in suit, in the proportions there called for, except that the carnauba shall be 50% of the entire amount, and treat them in the manner described in your patent, what can you say as to your opinion of sound records cast by dipping from such composition?

A. That they could be successfully made, but there would not result sufficient improvement or advantage by the use of this relatively large percentage to warrant its use in the proportions mentioned.

Q. 219. Suppose the composition be made in accordance with the process set forth in your patent, except that the carnauba employed be 50% or more of the entire composition, is it your opinion that if you undertake to cast records from this composition there would not be too much shrinkage or warpage?

A. It is my belief that if the materials were thoroughly combined in the manner indicated in the patent, that there would not be unfavorable shrinkage or warpage, and that the records could

be successfully cast. I know from actual experience that considerably larger proportions of carnauba were used in some of my experiments and successful records were made therefrom.

Q. 220. "Thoroughly combined," do you mean in the chemical sense?

A. Yes, I mean in the chemical sense, whereby the reactions mentioned in the patent are produced, with the resultant products of such reactions being formed.

Q. 221. If you make a composition of the materials named in your patent and in the manner therein described, except that the carnauba shall be 3 or 4, or even 10 times as much as all the rest of the ingredients; do you believe that so far as shrinkage or warpage is concerned, you could successfully cast sound records therefrom?

A. I have never mixed carnauba with the composition in such great proportions as you mention in your question. Therefore, I cannot answer as to how such composition would behave when cast into a record.

Q. 222. What is your best belief on the subject? I am asking only concerning warpage and shrinkage.

A. My best belief on this question would be that providing excess of stearic acid were present in sufficient quantities combined with myricyl alcohol of the carnauba wax, which may be either the free myricyl alcohol or which might be derived from the esters present as such in the carnauba wax, that even in the very great proportions, say, equal weight of each, or say $1\frac{1}{2}$ parts the carnauba to one of the other ingredients, that there would result a composition capable of being molded and having the desirable properties in perhaps even greater degree than present in the patented composition. This however would be an uncommercial proposition on account of the relatively great expense of carnauba wax.

(Continuing answer to *Q. 222.*) It is my belief, however, that if the proportions of the carnauba were continued higher, the point would be reached where its excessive shrinkage properties would manifest themselves.

Q. 223. What percentage, if any, of free myricyl alcohol is present in carnauba wax?

A. The percentage of free myricyl alcohol present in carnauba wax is stated by Story-Alaskyline to be 20% and this statement is confirmed by Sturke who made elaborate investigations of this material. This fact is substantially corroborated by the most recent investigators. So far as my personal observations are

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concerned, I believe that the carnauba wax contains a considerable proportion of free myricyl alcohol and while I have not experimented extensively to prove this point as yet, my observations of the reaction which takes place in making the patented composition, together with the finding of considerable proportions of stearic acid in the esters separated from the wax composition and the acyl number given by Lewkowitch to my mind confirm this belief.

Q. 224. I understand your answer to mean that in 100 lbs. of carnauba wax, there are present about 30 lbs. of myricyl alcohol. How many lbs. of free stearic acid would combine with 30 lbs. of myricyl alcohol under the proper temperature conditions?

A. I cannot answer this question without going into careful stoichiometrical calculations, and as this matter as well as the percentage of the myricyl alcohol present in the carnauba wax is now under investigation by me and others, I prefer not to answer questions along this line at this time.

Q. 225. Disregarding warpage, which I suppose we may consider as unsymmetrical shrinking, does the carnauba present in 20 your patented composition—does the composition shrink more, or less, than the regular blank composition?

A. The composition if I correctly understand your question made from the patented composition does not shrink away from the mold as quick and at as high a temperature as was the case with the blank composition, and as this feature is very important in the quality of the record-surface produced, these results are of considerable importance.

RE-DIRECT EXAMINATION, by Mr. DYER:

R-Q. 226. Can you state whether in connection with the patented composition as actually used it is necessary to vary the proportion of the ingredient and particularly the proportion of carnauba used, as variations take place in the climatic conditions, or because of change in seasons, or because of the localities in which the records may be used?

A. The composition is not altered for any of these reasons and is the same the year round. The records are sold all over the world and no complaints have made any changes necessary.

R-Q. 227. Are you able to say of your own knowledge how extensive were the sales of records using the patented composition from February 1st, 1922, up to say—April, 1923, when defendant made preparations to change its composition?

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A. The sales from the very first were very large, I should say, considerably over 10,000 per day, and from the beginning the sales rapidly grew to very much larger amounts. As to just how many were sold during the dates mentioned, if necessary, could be obtained from the books of the National Phonograph Company. I feel confident in stating, however, that the sales amounted to considerably over 10,000 a day for the period mentioned, which would amount to over 3,000,000. I have no connection with the selling department, but I kept a very close watch on the manufacture during that period and am quite positive that the amounts were even larger than I have stated.

R-Q. 228. In answer to Q. 26, you state that when the present blank composition was developed by you, it made the Edison phonograph a much better machine than the graphophone, and that the latter was substantially displaced. When the graphophone again returned, did it still use the ozokerite blanks?

A. No, they used the composition identical with the Edison blank composition, and also the size and shape as the Edison blank, so that it was difficult to tell one from the other, even by analysis.

R-Q. 229. In answer to Q. 46, you refer to the fact that the presence of hump black would produce a rough surface. Is this true with the hump black of the patented composition?

A. No, in the small proportions there used, there was no rough effect on the surface to be noticeable. In previous answer I had reference to sufficient lamp black to produce a hardening effect. If, however, hump black is carefully selected as to fineness and free from gritty particles and lumps, a considerable proportion of it might be used without producing roughness on the

30 records.

R-Q. 230. Having reference to the table given at the end of your answer to Q. 60, kindly state what percentage of records of each composition was rejected because they were "Cracked and Broken," or had "Chipped Edges," or were "Broken in Handling"?

A. In the case of composition "B," 18 records were rejected for these causes, or 19.3 per cent. With composition "C," 24 records out of 65 were rejected, or 36.9 per cent. With composition "D," 26 records out of 95 were rejected, or 27.3 per cent. With composition "E," 14 records out of 86 were rejected, or 16.2 per cent.

R-Q. 231. Under the circumstances would these percentages indicate, perhaps not mathematically, but approximately, any peculiarity of the several compositions?

A. Yes, these percentages would indicate a greater brittleness of the composition "C" over all of the other compositions, which fact I know from extensive experiments with these compositions to be true outside of these figures. The composition "D" would appear from these figures to be more brittle than "E." I notice, however, that the composition "D" appears to be very much more brittle than "E," which I would not expect to be the case. Outside of the abnormal percentage shown in "D," the general result of the figures are in exact accordance with what I know to be a fact.

R-Q. 232. Suppose we eliminate entirely all discards mentioned in this table, except in the column of "Not round and Run Out," which I understand is indicative of warping or excessive shrinkage; what then would be the respective proportion of good records?

A. In the case of composition "B" under this assumption, 56 percents would be rejected out of 70, or a percentage of 80 per cent. rejected, or 20 per cent. good. With composition "C," 23 records out of 53 would be rejected, a percentage of 69.6 per cent., leaving 30.4 per cent. good. With composition "D," 35 records out of 65 would be rejected, or 53.8 per cent., leaving 46.2 per cent. good. With composition "E" 40 out of 68 would be rejected, or 58.8 per cent., leaving 11.2 per cent. good.

R-Q. 233. What general conclusion would you draw from these figures?

A. That the warpage and shrinkage of "B" was greater than "C," that "C" was greater than both "D" and "E"; the difference between the warpage of "B" and "D" for instance is about 27 per cent. I notice that the warpage as indicated in these figures in the case of "D" and "E" is not materially different, one being 53.8 and the other 58.8 amounting to 5 per cent., which is a variation that might naturally be expected to occur, and does not necessarily indicate that one has more warpage than the other.

R-Q. 234. Do these figures or do they not confirm your own practical experience with these compositions?

A. They do most decidedly confirm my own practical experience with these compositions.

R-Q. 235. What composition do you refer to in answer to R-Q. 211?

A. That is the composition used by Mr. Edison when I took up my first experiment that resulted in the present blank material. It was a mixture of cerein and carnauba in the proportion of 70 of cerein and 30 of carnauba.

R-Q. 236. In answer to R-Q. 160, you state: "I furthermore

know with absolute certainty that the property of wearing better is not due to the simple heating of the composition," etc. What composition do you there refer to?

A. I there refer to a composition containing about 15% of carnauba, and the idea which I intend to convey was that if the high heat produced no chemical change it would not affect the wearing qualities of the composition, because I know from experience that when the blank composition was heated to a high temperature, its wearing qualities was not increased.

10 *R-Q. 237.* If crude carnauba was is added to the composition in the manner described in the patent in suit, would there be any difference in the resulting composition?

A. There would be no substantial difference in the resulting composition, excepting that it might contain particles of foreign matter like pieces of bark, and various dirt particles, which might prove objectionable.

Adjournd until Thursday, February 28th, 1907; 10 A. M.

20 ORANGE, N. J., February 28, 1907.
Met pursuant to adjournment.

Present—Cones] as before.

RE-DIRECT EXAMINATION, by Mr. DVEN, continued.
R-Q. 238. In the manufacture of the blank composition, at what temperature do the chemical reactions take place?

A. From 250° F. to 320° F. chiefly at between 250° and the melting point of the wax, or rather the temperature at which the wax remains fluid, which is about 280°. The higher temperature of 320° results in a more rapid chullation of the products of
20 the reaction.

R-Q. 239. Then, do I understand correctly that the blank composition can be perfectly made at no higher temperature than 320°?

A. Yes, in fact, the very finest material can be made at this temperature, it being very much lighter in color. In practice, however, for the purpose of hastening the operation, higher temperatures are used, and this light color is sacrificed, it being necessary of course, to take a very much longer time at the low temperature, than at the high temperature, and furthermore, it is difficult to always maintain the low temperature; that is not to
40 exceed the low temperature of 320°. And in cases where the temperature does go higher, there results a darker material, which

detracts from the uniformity of the product; that is to say, the uniformity in appearance of the blanks.

R-Q. 240. And, as I understand it, in the manufacture of the patented composition, where it is desired to effect the chemical reactions between the carnauba wax, or its constituents and the stearic acid, a temperature above 400° is necessary?

A. That is correct.

R-Q. 241. From your experience in this art, have you found that the action of the composition is affected by variations or changes in the methods of introducing the material within the mold, or in cooling, the material after it has been introduced within the mold, or in effecting the removal of the material from the mold?

A. No, I have found from my experience in this art, during which many variations in the molding process have been tried, that a material which does not have the proper molding properties, exhibits them, no matter what the variation in molding may be. Of course, I don't mean to say that the molding method would not greatly effect the ability to mold at all, but a material that exhibits unusual warpage and shrinkage, will exhibit those
20 features, and the consequent defects produced by the manner in which it shrinks from the mold, and the warpage which takes place then and after, no matter what the method of molding may be; that is, molding by a casting operation. Of course, this would not follow if molding by pressure, because in that case we would not realize the phenomena in passing from the molten to the solidified state. The same is also true as to brittleness and the wearing properties of the material.

R-Q. 242. You state in your answer to *R-Q. 186* that: "In the earlier records that we put out on the market, the lamp black ingreient was not used." When did you begin to actually use this lamp black with composition?

A. With some of the records that were made in 1901, in order to build up a stock so as to have a supply on hand when we began to sell to the market on February 1st, 1902, instead of using lamp black I made use of cokekerite for the purpose of coloring the composition, but we used only a small amount of cokekerite, so that at least as early as February 1st, 1902, we were using the lamp black altogether. I find that altogether we made about
40 30,000 records using cokekerite as a coloring material.

Signature and certificate waived.

BRANDE, N. J., March 5, 1907.

JONAS W. AYLSWORTH (recalled).

DIRECT EXAMINATION, by Mr. DYER.

Q. 243. So far as the mechanical construction of the molded records made by the National Phonograph Company is concerned, have those records been changed in any respect since they were first put on the market on February 1st, 1902?

A. No, they have not, except that when the molded records were first put out the name of the selection was not molded on the end, as we now do. Otherwise, the records have been always the same. I might say, however, that because of some legal complication, for a few months last year the internal ribs were omitted, and the records were remolded out smooth on their borders, but we again returned to the ribs. The drawing of the patent in suit, shows very clearly the form of record made by the National Phonograph Company. The Columbia records copy the same so closely that except for the name on them, it would be almost impossible to tell them apart.

Q. 244. Have you read the deposition of Mr. Cameron, defendant's patent expert in this case? A. I have.

Q. 245. Please consider the patents referred to by Mr. Cameron in answer to question 3, and state whether or not in your opinion these patents support the conclusions reached by Mr. Cameron in next to the last paragraph of that answer, and what, if any bearing, those conclusions if correct, may have on the specific art with which we are here dealing, namely, compositions for use in the manufacture of molded sound records?

A. In the answer to which you call my attention, Mr. Cameron refers to Tainter patents, Nos. 393,190 and 421,450, and to Edison patents Nos. 400,648, 430,274, 484,582, 484,583, and 488,191. He incidentally refers to Edison patent No. 200,321, to Bell & Tainter patent No. 341,214, and to Berliner patent No. 548,623. As a result of his examination of the two Tainter patents, and of the five Edison patents, first above referred to, he reached the following conclusion:

"I find therefore, from this review of the art that the materials heretofore employed, for making sound records, whether duplicates or originals, are materials of a wax or wax-like character, and that in the art the equivocality of metallic soap and fatty acids with waxes, sur-
as bees' wax, carnauba wax, ceresin, and mixtures or compositions containing these, is fully recognized. I also find that it is recognized in the art that when a

material is to be cut by the engraving style of the machine, it is desirable that it should have a certain degree of hardness, but that it should not be so hard as to offer too much resistance to the vibrating action of the style; and it is also recognized that when a material is to be molded to form a duplicate, as by melting it and pouring it into a mold, formed by electrodeposited metal upon an original, the material may be, and preferably should be, harder than that which would be employed when the records is to be cut by a vibratory style under the influence of sound waves."

It seems to me that these conclusions do not recognize the great difference between the art of making original records and the art of making molded duplicate records, nor do they recognize the great difference between a suitable composition for making a blank on which a record can be directly recorded, and a composition which can be successfully used for making duplicates, nor do the conclusions apparently recognize the actual situation as it existed in the early days of the commercial photographic art. As a matter of fact, only one of these patents (Edison No. 484,582) refers to the duplication of records and all the others relate to the making of original records. I have tried to make it clear that there is little or no connection between the art of making original records on a blank tablet, and the art of molding duplicate records. The fact that a composition might be perfect as a blank material would by no means indicate that it would have any utility at all as a material from which to make molded records. In fact the present blank material has not been improved for many years, and it may be considered perfect for its purpose; but it is not suited for the molded record art, and I firmly believe that if the blank material was all that we had, the molded record art would be materially behind its present state of development. Parthenow's, many, if not all of the patents, reviewed by Mr. Cameron, in his answer, describe inventions that are obsolete and have been obsolete for many years—inventions that are precluded by the development of the present blank composition and were relegated to the background by the blank composition and are now looked upon only as historical curiosities. For instance, the Tainter patent No. 421,450 of February 18th, 1890, (application filed November 14th, 1887) suggests the possibility of employing ozokerite, either alone or mixed with "bees' wax, carnauba wax, and others" as a coating for a paper tube to constitute a recording tablet. Ozokerite, as I have previously said, is crude ceresin, and is now

absolote, although ceresin is used as an ingredient of both blank and molded record compositions. But no one would think now of attempting to use cookerite or ceresin alone, or mixed with bees' wax or carnauba wax, even as recording material, because the blank composition is so infinitely superior for that purpose. Of course, as for attempting to use cookerite or ceresin alone, or mixed with bees' wax or carnauba wax, as a material from which to make molded records, it would simply be out of the question, since the material would be totally unfit for molding and even if records could be made, they would be worthless. This Tainter patent was filed about a year previous to the development of the modern soap blank, which immediately displaced all other materials on which to record directly. The second Tainter patent No. 333,190, although earlier in date of issue, *i. e.* November 20, 1888, was filed five days after the other one and refers to the latter in the specification. This Tainter patent describes a composition of bees' wax and carnauba wax, the percentage of carnauba wax being varied according to the seasons, and being higher in summer than winter. Of course a material that had to be changed three or four times and possibly oftener every year, and in connection with which a stock laid in one month might be unfit for use the following month, would be totally unfit even for the recording art, and certainly for the molded record art. This patent also antedates the invention of the metallic soap composition and with the advent of the latter on the market, it also was displaced, if had ever been used.

Referring now to the several Edison patents, the first patent referred to by Mr. Cameron, No. 420,648, suggests the use of stearic acid, preferably mixed with ceresin, bees' wax or paraffine, or with ceresin and bees' wax, as a material for blanks, but the composition of this patent was not only not used practically, so far as I know, but was also displaced by the modern soap composition. The patents to Tainter and to Edison so far considered are good examples of the early efforts made in the art to produce sound recording materials, and in which all sorts of waxes and gums and fatty acids were mixed together in varying proportions. Personally, I tried thousands of such mixtures and the patents that I review in answer to No. 43 disclose some of the efforts of others in the early days.

The first reference to a metallic soap among the patents mentioned by Mr. Cameron is in patent to Edison, No. 430,274 of June 12th, 1890, the application for which was filed July 20th, 1888, and suggesting preferably a lead soap. This patent was

filed at the very commencement of the experimental work that developed the modern soap blank and many things had to be discovered before the bald suggestion of this patent could be turned to any possible value. It had to be discovered that the one effective stearate for use as the base of a recording composition was stearate of soda; it had to be discovered that there must be present a considerable proportion of free stearic acid, means had to be discovered for correcting the crystalline tendency of the stearate of soda, and finally means had to be discovered for overcoming the hygroscopic nature of the material. All of this succeeded the application for Edison patent No. 430,274, and even when all that work had been done, we had in the art only the present blank composition and we did not have in the art a suitable molded record composition.

The next patent in order of date of filing, referred to by Mr. Cameron, is Edison patent No. 488,191, of December 20th, 1892, application filed January 19th, 1889. Although at the date of the application for this patent the modern blank composition was pretty well developed; this patent has no relation whatever to the blank art or to the molded record art, but it relates to an scheme on which Mr. Edison was working in the early days and which never materialized into successful accomplishment. That scheme was to make the recording tablets of flexible material, so that they could be folded and sent through the mails in an envelope. Consequently, the important consideration was to make a material that would be highly flexible, and the patent states that:

"There are many compounds of wax or wax-like material which may be employed for the purposes of my invention. What I prefer to use is a mixture of asphalt, with Japan wax, or pitches made from the distillation of fatty oils, or combinations of fatty acids, any of which materials are equivalents of wax for the purposes of this invention. The proportion of the different substances will vary as the conditions differ and as sheets of different degrees of flexibility are required."

The last Edison patent referred to by Mr. Cameron is in his answer — that is to say, last in order of filing — is No. 484,883 of October 18th, 1892, filed May 27th, 1890. This patent relates specifically to a jewel recording tool and states that:

"The recording surface of the phonogram blank is ordinarily of wax or a stearate or hard metallic soap, or other wax-like material or composition" (p. 1, lines 22-26).

Having reviewed the same patents that Mr. Cameron considers (except Edison patent 484,582, which I will soon refer to) it is not a fact that "in the art equivalency of metallic soap and fatty acids with waxes, such as bees' wax, carnauba wax, ceresin and mixtures or compositions containing these, is fully recognized." That is, in the art of duplicating sound records as claimed by Mr. Cameron. It is, of course, true that there were many materials known of a wax-like nature that could be used for recording purposes—in other words, they had the necessary wax-like properties that enabled an original record to be cut into the surface by the action of the recording stylus. Of the several materials mentioned by Mr. Cameron, *i. e.*, metallic soap, fatty acids, bees' wax, carnauba wax, and ceresin, it is evident that they are all of themselves fitted more or less perfectly for receiving original records, and in this sense I suppose there is a certain degree of equivalency between them, although in a practical sense there is very little in common, for example, between an effective metallic soap composition and compositions of rosinate and carnauba wax, or carnauba wax and bees' wax, as suggested by Tainter, or stearic acid and ceresin as suggested in the earlier Edison patent. But, because these ingredients may be all wax-like and in that sense possible equivalents in the art of making original records, it by no means follows that they are equivalents in the art of making molded records. If these ingredients were all equivalents, then apparently one could be as readily used as the other, and the fact that such is not the case would indicate to my mind that they are not equivalents.

In order to show that the equivalency of these different materials extends to the molded record art, Mr. Cameron refers to Edison patent No. 484,582 of October 18th, 1892, application filed January 25th, 1888, but this patent was applied for long before metallic soap compositions were known, and when as a matter of fact, the Edison Company was using a mixture of ceresin and carnauba, which has none of the attributes of a successful molded record composition, either in molding properties or in the results to be obtained from it. At the date of the application for this Edison patent, the only known material, so far as the literature of the art is concerned, that had been suggested for recording purposes, were compositions employing such waxes as bees' wax, carnauba wax, and myrtle wax, and such wax-like materials as ceresin and paraffin. The use of stearic acid or metallic stearates, or stearates of soda, and the other

materials entering into the modern blank composition, was quite unknown, when this Edison application was filed. The application refers broadly to "resins" but does not attempt to specify any particular resin that might be used; and it finally refers to "Plaster-of-Paris," which could have no utility in the modern art because a record made of plaster-of-Paris, could not be shrunk out of a continuous mold. For this reason, apparently, Mr. Edison in his patent shows the mold divided into three parts, so that after the record is made the mold can be opened to permit the record to be taken out. While the patent states that the material used is "preferably too hard to be satisfactorily indented with the phonograph," it does not except possibly in the case of plaster-of-Paris mention any material of that character.

Making a direct answer, therefore, to your question I would agree with Mr. Cameron, if his conclusion was modified to the extent that while, the prior art might have recognized the equivalency of many materials as suitable for use in the make-up of compositions on which original records may be made, it is quite silent as to the equivalency of these or any materials in connection with the molding of phonograph records. And, I also agree with Mr. Cameron that Mr. Edison recognized the importance of using a hard material from which to make records, although he does not suggest any such hard material. And, I will further say in answer to the question that if it be admitted that in a general way many materials were wax-like in character, so far as their capacity to be cut by a recording stylus is concerned, that fact would have absolutely no bearing upon, or relation to, the possibility of their use in compositions for making molded records. The two arts are quite dissimilar in many respects. They are practiced in different ways, they result in different products, and they make use necessarily of different compositions. With the recording art, the essential feature of the composition next to its smoothness, is its capacity to be cleanly and readily cut by the microscopic recording stylus. With the molded record art, it is absolutely immaterial whether the composition can be cut by a recording stylus, and as a matter of fact, it can only very imperfectly be cut by a recorder. In the recording art, warping and shrinking in manufacture are absolutely immaterial, because the blanks are tried up after they are seasoned, but with the molded record art, warping and shrinking are factors which must be carefully avoided.

In answer to Q. 4 of his deposition, Mr. Cameron states that the Edison patent No. 406,576, recognizes the fact

concerning carnauba wax, that advantage may be taken of its shrinking properties in passing from a molten to a hard or set condition. What bearing, if any, has this fact on the molled record art?

d. The Edison patent describes a composite recording blank, having an outer surface of a metallic soap, such as stearate of soda, and a body of asphalt. It is pointed out that in molding asphalt "it does not contract in hardening, and it is therefore, difficult to get it out of the mold again. By mixing from five to seven per cent. of carnauba wax with the asphalt, a compound is formed which shrinks slightly in hardening, and can therefore be readily removed from the mold" (p. 4, l. 72-79). With Edison, dealing with a non-contracting material, the sole purpose of adding carnauba wax to produce shrinkage. It did not contribute to the hardness, in fact, the recording surface is the usual material, and there was manifestly no problem of warping or uneven shrinkage to be overcome, or in fact, any of the factors to be reckoned with in the molled record art. With the composition of the patent in suit, there is no need to take "advantage" of the excessive shrinkage of carnauba; in fact, the blank composition possesses sufficient shrinkage. I have pointed out that apparently the effect of adding carnauba to any composition would be to impart to the same excessive shrinkage and great warping, but I found that, contrary to my expectations, by adding carnauba (which warps and shrinks excessively) to a metallic soap composition (which also warps and shrinks excessively) I obtained a composition in which warping and shrinking were greatly reduced and made very much more uniform.

Q. 247. I call your attention to Mr. Cameron's answer to Q. 10 of this deposition, and ask if you agree with the conclusion reached by him therein?

a. I understand that Mr. Cameron is not a practical man and that he has had no practical experience with the development or manipulation of sound record composition. If Mr. Cameron had been a practical man, I think he would have reached another conclusion. His position is based entirely on the theory that the ordinary blank composition (such as is described in Macdonald patent No. 666,725) possesses every single characteristic that a successful molled record composition should have, except the one characteristic of hardness, and that the addition of carnauba was supplies this one and only this one characteristic; and his further theory is that since carnauba was had previously been used in connection with ookerite and bees' wax it could obviously

be employed in connection with and as an addition to the blank composition. Now, as a matter of fact, as I have previously testified, the blank composition is not suitable in the molled record art, and would not be suitable for that art, if sufficiently hard. Mr. Cameron, for instance, states that "experience has taught that it does not stick or adhere to the mold," when as a matter of fact, the experience of the art is just to the contrary, and the blank composition does stick to the mold, and if used would make the surface rough and foggy. He also says that "experience has taught that records molled from this material shrink away from the mold without warping, so as to render it incapable of use on standard talking machines," experience has taught just the contrary, and we know that the blank composition is fatally defective in this respect. Mr. Cameron states that if carnauba was were added to the blank composition it "would not interfere with, but would possibly slightly increase the shrinking properties of the composition." He reaches this conclusion from the Edison patent No. 406,576, which states that the addition of carnauba wax to asphalt will increase the shrinking properties of the latter. This shows how utterly impossible it is to assume that because a certain result takes place with one composition the same result is going to take place in another composition, because, as a matter of fact, the carnauba wax decreases the shrinking of the blank composition. He says that if a person added carnauba wax to the blank composition "he would know from the same patent that it would not interfere with the limpidity imparted to the composition by the cerein wax." As a matter of fact, as I have previously testified, the presence of the carnauba actually increases the limpidity. Furthermore, he says that such a person "would have been taught by the Tainter patent No. 353,190, that it would not interfere with the fine texture, which would enable the material to be cut smoothly." The fineness of texture has nothing whatever to do with the capacity of the material to be cut smoothly while hot ("which I presume is what Mr. Cameron is referring to, because that is the characteristic set forth in the patent in suit) but is dependent on the molecular conditions. Some compositions are of very fine texture, and cannot be cut smoothly while hot; for example, this Tainter patent on which Mr. Cameron relies, describing the composition of carnauba and bees' wax, is a very good illustration of just such a composition. If such a composition could be molled as a record, it could not be cut smoothly while hot, but the material would follow the cutting knife, so as to

drag the record out of the mold. Another illustration of such a composition is found in my patent, No. 676,111, referred to in answer to Q. 48. That was a composition with a very fine texture, but I was unable to effectively ream it while hot.

In view of these facts, I believe that Mr. Cameron has reached the conclusion that he has, without really understanding the situation. The addition of carnauba does more than to increase the hardness of the composition, since it also results in the composition having properties that are not found in the blank composition, or in carnauba when considered individually. And the addition of carnauba results in properties which no one could possibly foretell without experiment. Furthermore, even if the only function of the carnauba was to increase the hardness of the blank composition, I do not see how any one could tell without experiment that the carnauba would be miscible with the blank composition. Although I had been familiar with carnauba for many years, as well as with the blank composition, I did not know that they were miscible, and in view of the complex nature of the materials entering into these compositions, I would not undertake to say myself, until I had found out by experiment, that carnauba wax would be miscible with the blank composition. Mr. Cameron seems to suppose that it follows as a mathematical certainty that since carnauba wax is miscible with bees' wax or paraffin, it is also miscible with the blank composition, but that of course does not follow because there are other materials with which carnauba wax is miscible and which are not miscible with the blank composition. For example, carnauba-wax is miscible with asphalt as stated in Edison patent No. 406,576, but asphalt is not miscible with the blank composition. And, there are other materials with which the same uncertainty arises. Considering the enormously complex character of the blank composition I do not believe that any chemist, however skillful he might be, could unerringly predict that a certain material or class of materials would be miscible with the blank composition, or that another material or class of materials would not be.

Q. 248. Have you read the deposition of Professor Holton, one of the defendant's chemical experts, who testified therein?

A. I have.

Q. 249. Before taking up Professor Holton's deposition, please refer to the records mentioned in your answer to R-Q. 237, and state of what composition and by what process the three million records therein mentioned were made?

A. Those records were made of the exact composition and

by the exact process described in the patent in suit between lines 24 and 101 inclusive of page 2, thereof.

Q. 250. Kindly take up Professor Holton's deposition and refer to his answer to Q. 3, in which he states that

"Carnauba wax itself is chiefly composed of a hard wax-like compound ether (myricyl cerate) and a minute quantity of free alcohol (myricyl alcohol)."

Does this statement of Professor Holton agree with the literature on the subject of carnauba wax?

A. It does not. The literature on the constitution of carnauba wax varies as to the constitution of the same, but the general opinion of the writers on the subject favors the conclusion that the percentage of free myricyl alcohol in carnauba is very considerable. I have already referred to the fact (in my answer to R-Q. 223) that the proportion of free myricyl alcohol as determined by Story-Maskelyne was 30%. This was confirmed by Sturcke, who is the one authority from whom all the modern books has derived their information on this subject. In Watt's Dictionary of Chemistry, (Revised Edition 1888,) the authority on chemical matters in general, it is stated that:

"The greater part of the wax is myricyl cerate and myricyl alcohol."

It is true that in the book by Lewkowitsch (referred to by Professor Holton in answer to R-Q. 69 of his deposition), that writer states that the wax contains "small quantities of free cerotic acid and myricyl alcohol." In a work such as that of Lewkowitsch, dealing with many thousand substances, the information is necessarily based on the investigation of others, and Lewkowitsch derives his information concerning carnauba from the work of Sturcke, which is directly referred to. Undoubtedly Lewkowitsch incorrectly abstracted the work of Sturcke in this particular, because the conclusion stated by Lewkowitsch does not correspond with Sturcke investigations. I have carefully read a full translation of Sturcke's work on carnauba wax, which I understand is to be introduced in connection with the deposition of Professor Stillman.

Furthermore, in Wright's well known standard work on "The Analysis of Oils and Allied Substances" (London, 1903) he criticises this very statement of Lewkowitsch and says (page 229):

"Carnauba wax is chiefly composed of myricyl cerate; it also contains free ceryl and myricyl alcohols, which must be present in considerable quantity judging

by the large acetyl value (page 144) found by Lewkowitzsch."

"The interpretation of Sturdebe's works by other authorities such as Watt's Dictionary of Chemistry, above referred to, and "Allen's Commercial Organic Analysis, Volume 2, Part 1 (Phila. 1899)," are contrary to the interpretation of the same as given by Lewkowitzsch. I might also say that from my own reading of Professor Sturdebe's work, it is perfectly clear that the percentage of free myristyl alcohol determined by him is very considerable.

10 Q. 251. Have you ever had occasion yourself to determine the fact whether carnauba wax does contain free myristyl or other alcohol, and if so, when did you make that determination and with what result?

A. Up to the time of filing the application for my patent I had made no investigation into the chemistry of carnauba wax. I observed, however, that in the manufacture of the composition a chemical reaction took place, and knowing from my experience with the blank composition that it contained free stearic acid, and being informed by the literature that carnauba wax contained 20 free alcohols, I felt reasonably certain that an ester or compound ether was formed, due to the reaction between the free stearic acid and the free alcohol or alcohols, as such reaction would, in addition to the product of a compound ester, form water which would cause the foaming noted. Also, when I examined the six Columbia records referred to in my first deposition, and the analysis of which appears in my answer to Q. 8 thereof, I then determined that there were present in defendant's composition compound ethers different from any which exist in carnauba wax, and which could be caused by nothing else than the reaction between the free stearic acid and the free alcohol or alcohols, or 30 possibly an interchange of acids between the stearate of soda and the cerotate of myristyl (the ester which is present in carnauba wax) which latter interchange may take place in addition to the formation of the compound ether referred to. This determination of the presence of new compound ethers in defendant's composition was made by separating the whole amount of the compound ethers present in the composition, saponifying the same with caustic potash in alcoholic solution, and separating the alcohols and hydro-carbons from the potash soap of the ester and 40 then decomposing the soap by acid treatment in the regular methods of soap analysis to separate the fatty acids. These fatty acids after washing and drying had a melting point much lower than the fatty acids which are contained in carnauba wax. After

making this a further separation of these fatty acids was effected, resulting in a mixture of fatty acids having a melting point of 50 degrees centigrade, and a crude cerotic acid having a melting point of 79 degrees centigrade; over 3/4 of the total fatty acids thus separated were of a much lower melting point. Now since carnauba wax does not contain fatty acids of this melting point, therefore the esters from which these acids were obtained are entirely different from any which were introduced by the addition of the carnauba, and hence it would follow that the carnauba wax must have contained free alcohol.

During the past ten days I have in collaboration with Professor Stillman of Stevens Institute, made very elaborate experiments in connection with these matters, including the determination of the substantial percentage of free alcohol in carnauba wax. The experiments were conducted principally on two separate lines of investigation: First, the reaction which causes foaming was investigated in the following manner: The soap composition of the patent, without the addition of carnauba or ceresin or lamp black, was prepared. The carnauba was purchased in the open market by Dr. Stillman. This material was the substance which is used in the talking machine industry and is imported from Brazil by Smith & Nichols, a firm doing business in New York, and from whom I observe defendant also buys its carnauba wax. This carnauba was washed in the manner described in the patent, and after separating from the water and then remelting to drive off any remaining water, was carefully filtered through the cloth used in filter presses, and after filtering was heated up to 450° F., to make sure that all water was removed. At this temperature the wax was perfectly 10 tranquil and free from bubbles or any indication of decomposition. It was then cooled down and marked and was ready for use in succeeding tests and experiments. The stearic acid was obtained in the open market and is the very best grade obtainable, known as the "Century" brand. The soap composition of the patent was also heated up to a temperature of 450° for about two hours and was free from any signs of decomposition products as evidenced by absence from foaming or bubbling. This soap composition of the patent and the purified carnauba wax, and the mixture of the soap composition and the carnauba wax placed in separate flasks having an inlet and outlet for 40 the purpose of displacing the air by nitrogen, were heated in a wax bath to a temperature of about 450°, and provision was made to connect the flask with apparatus which would catch all fatty

vapors, such as stearic acid, which might be evolved, and also provision to catch and determine the weight of water which might be evolved in each case. The substances were heated in a slow current of perfectly dry nitrogen, until no further distillation of water occurred. Only an extremely small amount of water was collected from the soap composition and the carnauba wax separately heated, but from the mixture of the soap composition and the carnauba wax there was evolved sufficient water to account for about 30% of free myristyl alcohol in the carnauba wax used. Now, since the substances separately heated did not evolve the water, which was evolved only in the case of the mixture, and knowing the composition of the soap material to contain free acid, this forms very strong proof that there is reaction between the free acid and free alcohol to form an ester.

Second, the soap composition of the patent the same as used in the preceding demonstration in accurately weighed amount, and carnauba wax in accurately weighed amount, and the mixture of the two in the proportions of the patent, accurately weighed, were each heated to 450° in vessels wherein provision was made that nothing whatever could escape as vapor. The three separate vessels were heated in the same wax bath to insure absolutely uniform condition, the heat being maintained for three hours. The object of this experiment was to note how much, if any, of the free stearic acid of the patented composition (i. e., the soap mixture and the carnauba) disappears to form esters or compound ethers by the combination of the free stearic acid with the free alcohol of the carnauba wax. To this end, after the completion of the heating at 450° under identically uniform conditions, the free acids contained in and evolved from the soap mixture separately heated were accurately determined, the free acids contained in or evolved from the carnauba wax were accurately determined, and the free acids contained in and evolved from the mixture of the metallic soap and carnauba wax were also accurately determined. Obviously, if there was no combination between the free stearic acid and the alcohol of the carnauba wax in the case of the mixture of the soap composition and the carnauba wax, then the free acids contained in and evolved from the soap composition as separately heated and the carnauba wax as separately heated—that is to say, the combined acids from both of these sources—should correspond identically with the free acids contained in and evolved from the mixture of the soap composition and carnauba when heated together, because the total weight of the soap composition

was the same in each case as also the weight of the carnauba. Now, if after such a demonstration it were found that the free acids contained in and evolved from the mixture of the metallic soap and carnauba were less than the combined amounts of free acids contained in and evolved from the separately heated metallic soap and the separately heated carnauba, the difference would indicate the amount of free acids that had entered into combination with the free alcohol or alcohols of the carnauba wax. The result of this test showed the disappearance of a sufficient amount of free stearic acid in the case of the mixture of metallic soap and carnauba wax to account for the presence of a very considerable proportion of free myristyl alcohol in the carnauba wax. I might mention as a confirmatory fact that in the titration of the free acids, I observed that in the case of the mixture of the soap composition and carnauba wax, there was a very much larger proportion of insoluble ethers present in the solution than was present in the combined solutions of the carnauba wax and the metallic soap composition as heated separately. This was an ocular confirmation of the results obtained by the chemical experiments referred to. In fact, as a result of these experiments I am almost inclined to believe from large percentage of myristyl alcohol necessary to combine with the free stearic acid found to have disappeared, that a part of the free stearic acid may have displaced a part or all of the combined cerotic acid, so that instead of having myristyl cerate (the natural compound ether of the wax) we would have only myristyl stearate, the new wax-like compound ether. But that there is free myristyl alcohol in the carnauba wax and that a reaction between the same and the free stearic acid occurs to form myristyl stearate, the experiments made by Professor Stillman and myself satisfy my mind beyond the possibility of a doubt.

Q. 252. From what you have just said, I take it that you do not agree with the statement of Professor Hutton contained in answer to Q. 3, and elsewhere expressed in his deposition that:

"It is barely within the range of possibility that the minute quantity of free alcohol contained in carnauba wax might react under the temperatures mentioned upon some of the free stearic acid, so as to produce a very small additional quantity of wax-like compound ether, but if this reaction does occur (and as to whether it does or not, no scientific chemist is yet able to state authoritatively) the quantity of wax-like ethers thus produced in so minute as to be entirely negligible."

A. No, I do not agree with Professor Holton, who cites no proof whatever in support of his statement. I have found, as a matter of demonstration, first, that there is a large quantity of free alcohol in carnauba wax, second, that beyond my question whatever, there is a reaction between the free alcohol and the free stearic acid, third, that a very large amount of wax-like ethers result from this reaction, and fourth that, regardless of the amount of compound ethers formed, the result is not negligible, but is commercially of the highest importance.

10 Q. 253. In answer to Q. 11 Professor Holton states that certain figures given by you in answer to Q. 75 of your former deposition are incorrect. Do you agree with Professor Holton in this respect?

A. Yes, the figures as given by me on cross-examination are wrong. These calculations were hurriedly made in response to the question by Mr. Massie, and there was a mistake in arithmetic. Of course, if I had gone over the figures carefully I would have detected the error.

Q. 254. Professor Holton in answer to Q. 14, referring to Edison patent No. 400,648, describing a composition in which stearic acid and bees' wax are used, states that the combination of the free alcohol of the bees' wax and the stearic acid "would make a wax-like compound ether" if the two were simply melted together. Is this correct?

A. This is not correct. There could be no combination of stearic acid and free alcohol by simply mixing the melted substances together. Combination would only take place by the aid of a very much higher temperature than that necessary to melt the two substances, or by the introduction of a dehydrating substance, 20 such as hydrochloric acid gas, or strong sulphuric acid.

Q. 255. Professor Holton in answer to Q. 17, seems to think that the frothing which takes place when the carnauba wax is added, as described in the patent in suit "is by no means a conclusive proof that a chemical action is taking place," and he suggests that when carnauba wax alone is subjected to a high temperature a violent frothing and frothing takes place, due to the elimination of contained moisture and air therein. He also points out that in heating a composition to a high temperature suggested in the patent, the parts of the mass closest to the heat are likely 40 to be volatilized or dis-associated to cause frothing or foaming. Do you regard Professor Holton's criticisms of the frothing or foaming test as being valid?

A. I do not; Professor Holton's statement is misleading, and

shows a very imperfect observation of what takes place when carnauba wax is melted. The fact is that carnauba wax in its crude form as purchased in the market usually does contain mechanically mixed water and air, but the mere act of melting at a temperature of boiling water or slightly higher, eliminates this water and air and the wax then becomes perfectly tranquil and free from froth or foam. In the course of the manufacture of the patented composition all these causes of froth and foam were eliminated from the carnauba wax before it was added to the soap mixture, so that any frothing which takes place afterward is not due to the water contained in the carnauba wax as stated by Professor Holton. As to the decomposition at the points of contact with the vessel in which the compositions are heated, in the ordinary practice in making these compositions the vessel is so arranged that it becomes uniformly heated, so as to avoid any such decomposition, and this eliminates the possibility of decomposition as stated by Professor Holton taking place and accounting for the foaming noticed in making the composition. Furthermore, if such decomposition due to overheating caused the excessive foaming noted, the same would take place with the blank composition which is heated in the same manner and with which no foaming does take place, excepting that due to the reaction in making the soap composition, which is characteristically different from that due to the reactions of carnauba and is finished in a much less time.

Q. 256. From your extensive experience as a commercial chemist, particularly versed in this art, and observing the precautions which you do observe in the manufacture of the composition, would you regard the prolonged and characteristic frothing and foaming as being a substantially conclusive indication that a chemical reaction was taking place?

A. Yes, even if I had never made any other tests in the matter, and the precautions as to heating both substances up previous to their mixture had been carefully carried out, I should consider the evidence of frothing and foaming noted on their mixture at the high heat to be a very conclusive indication that a chemical reaction was taking place, and knowing the nature of the material, the only logical conclusion that could be arrived at under those circumstances would be that water was being given off by the reaction and that an ester reaction was taking place.

Q. 257. In answer to Q. 18 Professor Holton questions the conclusive nature of your statement that another indication of the formation of the compound ether is the different nature of

the two compositions made at a high temperature and at a low temperature. He states that the mere heating of such a mixture for an extended time "contributes materially to emphasize this change in the physical characteristics of the material wholly independent of any chemical reaction" and that this physical change "alone would cause the molded composition to offer greater resistance to the wearing action of the stylus," and in this connection he refers to Tinker patent No. 421,450, as an example of the concentration or toughening of a material by prolonged boiling. In your opinion, has Professor Holton adequately disposed of this evidence of the formation of a compound ether as testified to by you?

A. No, I do not think so. If Professor Holton had proved or cited any experiments to prove that there was no chemical reaction, and that we still had the physical differences noted, then there would be some grounds for his statement. His reference to the Tinker patent No. 421,450 does not seem to me to be pertinent, because that patent relates only to the idea of boiling ozokerite, so as to drive off the volatile impurities, and consequently make it tougher; but in this art the high heating does not drive off any volatile impurities, although a certain amount of stearic acid is volatilized, but this we replace at the end of the operation. This particular observation I made not for the purpose of having it stand alone as an indication of the formation of a compound ether, or of some other chemical change, but as confirming the other reasons. In most chemical work the manifestation of a single phenomenon while it may be indicative of a certain chemical effect, would not be accepted as necessarily conclusive; but if we encounter several phenomena, all indicating the same effect, we can safely assume the effect to be conclusively demonstrated.

Q. 258. In answer to Q. 17, +Q. 81, and Q. 123, Professor Holton expresses the opinion from the analysis made by you of defendant's records, and from the analysis made by him of certain experimental records introduced by Mr. Thornberry, that all the free stearic acid is accounted for, so that none could exist in combination with the free alcohols of the carnauba wax. Do you regard Professor Holton's views in this respect as sound?

A. No, I regard Professor Holton's deductions and calculations as contained in the answers to the questions referred to as most unscientific and unreliable. He attempts to compare the analysis of a composition made previous to March 20th, 1905 (the date when I received defendant's records for analysis), with

the calculated percentage of a composition known to contain a different percentage of carnauba, and in which he assumes the commercial materials used in the one case to have the same definite composition as they do in the other case. The Thornberry composition was made in December, 1905, nearly two years after the records which I analyzed were made. The free stearic acid contents of these compositions will vary as much as 10% in two different lots, due to acid vaporization, and the variation of the Na_2O contents of the caustic soda and salt-soda ingredients. He assumes, I observe in answer to Q. 11, that the free acid is pure stearic acid, and calculates 25.4%, and in +Q. 81, he assumes that the free acid is the commercial article, and calculates 27.6% of free acid. In his determination, by experiment of the free acid in the Thornberry record, he does not state whether he determined it as pure stearic acid or as the commercial article, but he adopts the calculated amount—27.6%—in making his comparison. It is impossible to calculate with exactness the true percentage composition of a compound made from a formula in which commercial chemicals known to vary are used, and in which some of the ingredients are volatilized during the manufacture of the compound and during the manufacture of the product from the compound. Variations could easily occur amounting to several per cent. between calculations thus made and the exact composition as determined by analysis. It only requires a very small percentage of free stearic acid to disappear in combination with the amount of myricyl alcohol contained in carnauba wax in the proportion as shown by the analysis, namely about 8%, even assuming that 30% of this 8% is free myricyl alcohol. The calculated amount of palmitic acid required to combine with the free myricyl alcohol contained in the amount of carnauba contained in defendant's record, as shown by analysis, would be 1.4% assuming that the carnauba contained 30% of free myricyl alcohol). Now, since the Thornberry record referred to stated to contain 6% of carnauba, the amount of free palmitic acid required in this case would be still smaller. Calculating the amount of pure stearic acid required for the Columbia record would be 1.55%, and for the Thornberry record somewhat less than this. Then, if we assume the free acid to be composed of half stearic and half palmitic, the Columbia record analyzed would require 1.48% of free stearic acid, and the Thornberry record somewhat less than this amount to combine with the free myricyl alcohol even assuming that the carnauba wax used contained as much as 30% of free myricyl alcohol. If Professor

amount of free stearic acid obtainable under the conditions assumed by Professor Holton?

A. Macdonald formula B, as given by Mr. Thornberry in his answer to Q. 59, gives the following:

"Stearic acid	.....	300 lbs.
Aluminum powder	.....	15 "
Caustic soda lye	.....	9 "
Sul-soda	.....	60 "
Ceresin	.....	60 "
Water	.....	12 gal.

It would be absolutely impossible to calculate with exactness the amount of free stearic acid that would be in the composition when finished made from this formula, even if there were no loss of stearic acid from vaporization which inevitably does take place to quite a large extent, depending on the time the material is heated at the high temperature and upon the temperature of the stearic acid during the sizzling of the ingredients. But, leaving this vaporization out of consideration, we have first, aluminum powder 15 lbs. Now, this aluminum powder has an impurity of about 2%, which is variable, and which would largely alter the calculations of free stearic acid; second, the caustic soda lye varies within large limits. This would also greatly affect the percentage of free stearic acid. Third, the sul-soda is a crystalline substance containing no molecules of water, which on exposure to the air loses a large quantity of water, and changes in its percentage of Na_2O to quite a large extent. This also would have a very large influence on the amount of free stearic acid. The ceresin varies during the heating and could not be figured as the full amount given in the formula. Now, in making a calculation like that of Professor Holton, and leaving out entirely the important factor of loss by vaporization of stearic acid, it would be possible to take as examples of these variable factors figures which would give results at least 10 pounds on either side of the amount calculated by Professor Holton, or, in other words, within those limits, it would be possible to get any result we wanted to get. On the subject of vaporization of the stearic acid, I know from the experience that its loss is in the neighborhood of 10% of the free stearic acid, or about 2% of the whole composition. These calculations of Professor Holton are to my mind as unscientific and unfair as if a person having a problem in algebra to solve, and knowing the answer, were allowed to give any values he saw fit to the symbols.

Q. 261. In answer to R-Q. 152 Professor Holton states that the amount of free stearic acid determined by him from analysis of "Thornberry record formula B with carnauba" assuming the amounts of the composition to be those given in Macdonald patent No. 665,725, to be 122.5 pounds as against 122.4 pounds, found by his calculation of the formula of that patent, and he concludes (R-Q. 153) that this coincidence in figures "is a practical demonstration that there has been no such reaction" between any free stearic acid and free alcohols in carnauba wax. Do you agree with Professor Holton in this respect?

A. I do not consider that this coincidence in figures proves anything regarding the reaction of free myristyl alcohol in carnauba wax and the stearic acid, because as I have stated before, even assuming that there would be no loss of stearic acid, due to vaporization, the value given in the calculated result might be varied within wide limits by assuming various degrees of purity of the ingredients. Then aside from this, it was stated by Mr. Thornberry that the composition in question was cooked for 13½ hours. This long cooking at a high temperature would cause a variation in the amount of free stearic acid of at least 2% of the whole composition, or about 2% of the free stearic acid. Then, if stearic acid were added to make up for this vaporization, the amount added would have to be considered, and furthermore, during the molting operations, there are slight losses of stearic acid. Even assuming that there was no reaction, which is the basis of Professor Holton's assumption, we would expect a considerable variation in the amount of free stearic acid, where, on the contrary, in his statement he has identical or practically identical figures with the two compositions. This coincidence means nothing, and in fact the entire calculation of Professor Holton means nothing. There might be considerable reaction in one case and no reaction in the other case, and it would be readily possible to obtain the same figures in the two cases by simply giving different values to the ingredients used as to their purity. It would be just as impossible to make a fair and accurate comparison between a paper formula, such as that of the Macdonald patent, and a formula derived from actual analysis, as to make a comparison between either formula and the multiplication table. Q. 262. Kindly consider patent to Miller, referred to by Mr. Cameron in R-Q. 76, and state whether this patent describes a composition which would have any utility whatever in the mollied record art?

4. In the answer referred to Mr. Cameron states only a few of the ingredients referred to in this patent and he does not explain what the patent relates to. The Miller patent is a composition for polishing shoes and not for making molded phonograph records. Mr. Cameron also in describing this composition mentions as the first ingredient—bar soap, when as a matter of fact, only 3 ounces of soap are used as against 10 pounds of paraffin, 6 pounds of stearic acid, four pounds of bees' wax, two pounds of ivory black, 1½ pounds of lamp black, three ounces of gum-dammar, ten ounces of sugar, one-half gill of alcohol, and one-half gill of turpentine. In other words, the amount of soap used is about 1% of the entire composition, whereas, with a composition suitable for the molded record art, the proportion of soap is about 76%. Bar soap is of no utility in this art, being in the first place a hydrated soap, and in the second place, an oleate, which is very largely hygroscopic. One of the things we have to avoid is the presence of any considerable percentages of any oleate. The composition disclosed in this patent is comparatively soft, much softer than the blank composition, and could not be used successfully for making molded records. Mr. Cameron seems to have some doubt whether the composition of the Miller patent may not have a boiling point as high as 450 to 475° F. As a matter of fact, the boiling point would be that of the most volatile ingredient, which is the alcohol, and this boiling point would be less than 200° F.

Q. 263. Have you read the deposition of Professor Charles E. Munroe heretofore? A. I have.

Q. 264. Kindly consider the patent to Hart, No. 418,947, referred to by Professor Munroe in answer to Q. 8, and state whether this patent describes a composition suitable for use in the molded record art.

A. It does not. It describes a composition for crayons, consisting of carnauba wax, stearic acid, and paraffin, in substantially equal proportions, and a suitable coloring pigment, the ingredients being melted and molded into the form of crayons. Such a composition would be much softer than the blank composition and would not be commercially molded. As a composition for the art, it would be far inferior to the blank composition.

Q. 265. Having reference to Macdonald reissue patent No. 12,695, and assuming that it were attempted to make molded records from a composition of stearic acid and ceresin, would the effect of suddenly chilling the record cause the harder ingredient to predominate at the surface, as described therein, to form a

"casting whose exterior surface is much harder and denser than its mass" (p. 2, lines 15-16).

A. No, it would not cause the harder ingredient to segregate and collect on the chilled surface. That is an entirely erroneous idea; on the contrary, suddenly chilling of mixtures of molten substances generally tends to prevent the segregation. What actually does take place is that the sudden chilling renders the surface less crystalline for a short depth only, but this is true of all molded records, no matter what the composition is. It is true of stearic acid alone.

STEVENS INSTITUTE, HONOLULU, H. I.

Monday, March 18, 1907.

Met pursuant to adjournment.

Counsel present as before.

The witness JONAS W. AYLSWORTH is recalled for the purpose of cross examination in accordance with arrangements previously made between counsel.

CROSS-EXAMINATION by Mr. MASSIE:

Q. 266. I call your attention to your answer to Q. 243. In this answer you say the Columbia records copy the phonograph records of complainant in appearance so closely that except for the name on them it is almost impossible to tell them apart. Phonograph records are of a homogeneous composition as distinguished from a paper tube having a waxy coating thereon are they not? A. They are.

Q. 267. They have an internal taper, instead of a true cylindrical bore and they have internal ribs instead of a smooth surface have they not?

A. The phonograph records have an internal taper of bore with concentric parallel ribs.

Q. 268. Do you know whether or not these features are, or at least purport to be, covered by patents owned by the Edison interests; I refer to the fact that the composition is homogeneous instead of being spread on a paper tube, that the cylinders have a tapered bore and have internal ribs.

Counsel for complainant admits that except for the composition used by defendant, and the process employed by defendant in the manufacture of the records, up to the present time no claim for infringement of any other patent is made.

Defendant's counsel proposes to show that the defendant has the benefit of a license under the patent

referred to, and therefore will object to question 243 and the answers thereto as irrelevant, immaterial and tending to mislead the Court.

Complainant's counsel replies that it is now too late for the defendant to raise any question of license in this case and that no question of license is set up in the answer.

10 *Q.* 269. In answer to *Q.* 45 you refer to Edison Patent No. 400,648, and say that the composition of this patent, so far as you know, was not used practically. Do you know whether or not any composition consisting of stearic acid and ceresin was ever used practically for the purpose of phonograph blanks or phonograph cylinders?

A. No, I do not know of that particular composition having been used practically for phonograph blanks or for any other form of phonograph cylinders. This answer refers to all the compositions mentioned in this Edison patent.

20 *Q.* 270. So far as you know, during the period between the date of the Edison patent just referred to, No. 400,648, and the date of your Aylsworth patent here in suit, was there any soap composition in general use, or in common use for the purpose of phonograph cylinders, consisting of stearic acid and ceresin along with no other ingredient present?

A. The question as you have stated it is not clear. You speak of stearic acid and ceresin alone as being soap composition; this would not be strictly correct; there was, however, between those dates, in general use, a soap composition containing stearic acid, soda, alumina and ceresin. This is a blank composition, practically identical with that which is used today.

30 *Adjourning until Tuesday, March 19, 1907, at 10:30 o'clock A. M. at the office of defendant's counsel, Tribune Building, New York City.*

OFFICE OF PHILIP MAURO, ESQ.,
TRIBUNE BLDG., NEW YORK CITY.
TUESDAY, MARCH 19, 1907.

Met pursuant to adjournment.

Counsel present as before.

40 **JONAS W. AYLSWORTH.**

CROSS-EXAMINATION resumed.

Q. 271. In question 250 after giving Story-Maskelyne's figures for the free myricyl alcohol which he thought he found

you say "This was confirmed by Sturcke." What percentage of free myricyl alcohol did Sturcke find?

A. Sturcke did not sum up his results and give percentages, but from his figures of the soluble portions of the extracted portion, by hot alcohol, given in his article I calculate that there must be at least 31% of free wax alcohol. Sturcke states

"Furthermore it is demonstrated by the above determinations that free alcohol even in considerable quantity, is contained therein."

Operating on 1957 grammes of the raw wax by extraction with hot ethyl alcohol, Sturcke obtained 60.04 per cent. of extract; this extract which he obtained, while it does not necessarily represent a completion of the extraction of all matter that might be soluble in hot alcohol, yet would contain the greater portion of all of the free alcohols existing in the wax together with smaller proportions of the esters, which he states, in this same article, are soluble only to a very slight extent in boiling alcohol. By this treatment he gets a residue after extraction, and an extracted portion. The insoluble residue must necessarily contain by far the greater part of the esters which are in carnaubax and the extracted matter must contain by far the greater portion of the free alcohol. Then he operates on the residue by saponifying it by prolonged treatment with alcoholic potash, thereby decomposing all of the esters which it contains and setting free the alcohols which existed in it, in combination. Then, after carefully drying this soap formed from the acid that was in the ester, and the alcohols which were combined with cerotic or the other acid to form the ester, he extracts this material; he thereby obtained 51.7 per cent. of extract which represents a fair measure of the alcohols which were in combination in the ester in this particular residue. Then operating in the same manner upon the extract matter obtained from the raw carnaubax wax he obtained 78.4% of extract. This figure represents the free alcohol that was contained in the wax together with a smaller amount of alcohol which existed in this original extract in combination with acids in the form of esters, which, as he has stated in this article, were slightly soluble in hot alcohol. While operating on these large amounts by extraction will give a fair indication of the composition yet they are not exactly quantitative and the deductions that can be drawn from them would only indicate the minimum amount of free alcohol. If the extraction were perfect then the result could be accepted as quantitative. Since he obtains an extract amount from the original alcoholic extract

after saponification, which he has given as 78.4% of total alcohols from the extracted matter that was soluble in the hot alcohol, therefore that contained practically all of the free alcohol existing in the wax together with a smaller amount of alcohol which existed in the original extract matter as an ester, this ester being slightly soluble in the hot alcohol.

To arrive at an approximation of the amount of the free alcohol that was originally present in the carnauba wax, it will be necessary to know how much of the alcohol compound in this 78.4% was derived from esters. To this end we take the part which did not dissolve in the hot alcohol and which, after saponification to liberate the total alcohols contained in it, gives us 54.1% of extract. This 54.1% of extract can be nothing else but the alcohols and whatever traces of hydrocarbons may have been present in the material.

In this case, as well as in the other cases, where the saponified substances is extracted, the solvent used is petroleum ether, which solvent dissolves the alcohols and hydrocarbons but does not dissolve the potassium or sodium soap combination of the acids. Therefore this residue, of which 54.1% was extract matter, gives a fair estimate of the total alcohols present in the esters contained in carnauba wax. That would leave 45.9% of acid.

Then, by simple proportion, we can figure how much of the 78.4% of extracts, which I have mentioned before as containing the total free alcohols together with the smaller amount of alcohols derived from esters, was ester, in the following manner, the result of which will give us a fair estimate of the minimum quantity of free alcohols in the wax: We take 78.4% from 100; this gives 21.6% of acid occurring in the part soluble in alcohol; then 51.1% were found combined in the residue with 45.9 of acids; therefore, by proportion, there should have been combined with the 21.6 of acids, that were present in the parts soluble in alcohol, 25.4 of combined alcohols; that is to say, alcohols in combination with the 21.6 of acid. Adding these two sums together we get a total of 47% of esters in the extract matter. Then deducting from the 78.4 of alcohols obtainable from the part soluble in hot ethyl alcohol gives 31.4% of alcohols that were in a free state in the original wax.

These figures, of course, are not exactly quantitative, but they indicate that the wax must have contained at least that much free wax alcohol.

Defendant's counsel desires further study of this an-

swer before being able to cross-examine on it, if that can be done at all.

Q. 272. Are we to understand that your conclusion that Sturcke's investigations indicate about 31% of free alcohol in carnauba wax, depends upon the line of reasoning just set forth in your answer?

A. As to the figures of the minimum amount, that line of reasoning set forth in my answer would indicate that there is at least 31% of free alcohol in the carnauba wax. There are other references in the article in which he states that there undoubtedly is a considerable per cent. of free alcohol in carnauba wax, but I find no other figures from which any approximate estimate of the amount could be obtained.

Q. 273. But your conclusion depends upon the reasoning set out in the long answer just given?

A. As to the approximate figures of the free alcohols it does, I, of course, refer to Sturcke's article.

Q. 274. I show you that particular portion of the translation of the Sturcke article which I quoted in Q. 111 propounded to Dr. Stillman. Do you understand that in the proceedings there described the carnauba wax was dissolved in alcohol?

A. No, in the proceedings there described the saponified material is extracted with petroleum ether.

Q. 275. With what do you understand the wax was "directly saponified"? A. By alcoholic caustic soda.

Q. 276. What is the meaning in this connection of the phrase, "separated with salt", what was separated and how was this done?

A. In soap, in order to separate the same from excess of alkali, the operation of salting out is employed. This will separate the soap, and other fatty bodies contained in the same, from the excess of alkali and from the solvent which is contained in the soap. In this case, the operation of salting out removes both the excess of alkali and the alcohol which was used as a solvent, for that alkali during saponification.

Q. 277. It was the soap that was "dried" after the separation with salt? A. It was the soap and alcohols mixed therein.

Q. 278. What substance or substances did Sturcke dry?

A. He dried the total saponified mass consisting of the soda soap and of the acids in the material which he saponified together with the alcohols that were contained in the same.

Q. 279. "And then the dry soap (wax) extracted." How was the dry soap extracted, and what was left?

A. The dry soap was extracted with petroleum ether; in this article I do not see any description of the exact apparatus used. There are a number of methods that are used for carrying on this process, the principle involved in each is that, first, solvent is supplied to the material which carries away the portions which are soluble in the solvent, and this is repeated a sufficient number of times to more or less completely remove all of the matters soluble in the particular solvent used. This would leave a residue consisting of the soda soap of the acids contained in the matter originally. This original matter in this case, as mentioned on page 7 of the translation of Sturcke's article, was that part of the carnauba wax which had remained undissolved in hot ethyl alcohol during the treatment of the original raw wax; and therefore these acids would represent the acids combined in the esters which occur in the carnauba wax.

Q. 280. If I understand your attitude, where the Sturcke article says "The wax was directly saponified," do you consider that the term "the wax" does not mean carnauba wax, but merely that portion of it which had formerly failed to dissolve in the hot alcohol?

A. In the part which I have just referred to in my previous answer Sturcke mentions that the part of carnauba wax which had remained undissolved in alcohol was converted into soda soap and extracted. Further down on the same page he states—"In the experiment with a second and third quantity of wax—in the experiment with alcohol was left out. The wax was directly saponified and then separated with salts dried, and the dry soap extracted." This refers to an additional experiment.

Q. 281. And it was this additional experiment which is set out in Q. 111 propounded to Dr. Stillman; in other words, the substance dealt with in the experiment there inquired of was the carnauba wax and not some undissolved residue?

A. The amounts given in the answer to Q. 111 do not, as I take it, represent either one; they represent the combination of the residues undissolved in hot alcohol, and two fresh portions of the raw carnauba wax saponified, amounting in all to 2800 grams, from which he obtains 1,550 grammes of alcohols for purposes of fractionating, in order to study their nature. There is nothing quantitative about it because he states that in the experiment with the second and third quantity of wax about 800 grammes of the original wax, which was not digestive with alcohol, was used. That second and third portion together would amount to about 1600 grammes, which, together with

the other 800 grammes obtained from previous saponifications, amount to 2800 grammes. In this particular part of the treatise he is dealing with the substance extracted, which, by the treatment, would be the alcohols and hydrocarbons contained in the original wax, in order to get a large quantity for the purpose of fractionating and identifying various bodies contained in the same. In order to perform such fractionating experiments it was necessary to have a very large amount and for that reason Sturcke has evidently combined all of his extracted matter including that from raw wax and that from the residues after alcoholic extraction.

Q. 282. That is to say, according to your views, Sturcke got about 1,550 grammes of the alcohols and hydrocarbons out of about 2800 grammes of material, and this material consisted of practically three batches, namely, one consisting of some 850 grammes of the ester residue and the other two constituting together about 1600 grammes of the crude carnauba wax?

A. That is my interpretation of it.

Q. 283. An interpretation of what Sturcke means is of course for the Court. If we assume that Sturcke's article means that the 2800 grammes was the original carnauba out of which he obtained the 1550 grammes of alcohol and hydrocarbons, this would indicate the presence of about 55% of the alcohols in the wax, would it not?

A. If we assume that, I think your figures are correct; but it is expressly stated in summing up his work on page 3 that out of 1,935 grammes of the part insoluble in alcohol he got 1,048 grammes of extract amounting to 54.1%, and judging from that I would say that your assumption in the question is not correct.

Q. 284. "The part of the carnauba was which did remain undissolved in alcohol, about 850 g" etc. would represent the residue from what number of grammes of the original carnauba?

A. The amount solved out of that body was about 60%.

Q. 285. In studying this matter and giving your testimony did you take into consideration the fact that the language employed is this, namely: "The total extract quantity, from the total quantity of carnauba wax treated (altogether 2800 g.)"

A. I do not consider those figures as representing the total amount of carnauba wax treated, but that they refer more especially to the carnauba wax and the residue prepared in this particular part of the experiment, because it is stated at the beginning of the article that in one case, 1,931 g. and in another

1,957 grammes of original carnauba wax were used, and further on it is stated that two lots of 800 grammes each of original carnauba wax were used, thus making a total of 5,488 grammes, which does not correspond at all with the assumption that 2,800 grammes represents the total amount of original wax treated.

¶Q. 286. The paragraph which you have just referred to as being near the beginning of the article begins, does it not as follows:

10 "In order to obtain information about the part of the carnauba which was used in boiling alcohol, as well as about the part which was not dissolved, carefully weighed quantities (about 2 g.) of the raw carnauba wax and of both the dissolved and undissolved parts thereof were saponified," &c.

He is dealing with carnauba wax obtained from an English drug store and some obtained from a Dresden drug store; and after that follows the table in which the figures as given in this translation of the material obtained from the German store appear to be 1,931 g.; of the material obtained from the English store, 1,957 g.; that the material soluble in alcohol is 1,939 g. and that insoluble in alcohol 1,935 g.; does it not appear 20 to you that the comma in these last four figures is a mistake for the decimal period, so that the amount employed in each of the four tests was stated before to be about two grammes instead of about two thousand grammes; and is it not also the fact that in German the diacritical mark which we call a comma is the decimal point?

Before answering this question I call your attention to a paragraph a page or two further on in which Sturcke says that 30 in order to examine still further the solubility of the carnauba wax "2.52 g." of it was treated and of this there remained undissolved "0.98 g." and a few lines below he gives the figures "0.295 g." and "0.286 g."

A. In calculating the percentage of myricyl alcohol from these figures the percentage given was taken as a basis, and not the actual weight of the substances used. You are correct; Sturcke evidently meant two grammes of the material or thereabouts. I had not considered it as being the small amount, I considered the amounts given as the larger amounts "1.931 g." not 40 regarding the comma as the decimal point. This, however, does not affect the deductions in regard to these figures, but it would change my answer to ¶Q. 285 where I referred to 5,488 grammes, because in that answer I considered these figures as the larger

amounts. This interpretation of these weights actually used in this experiment, namely, 1,931 grammes, makes those figures more quantitative than I had considered them when I was figuring out the 31% of myricyl alcohol. I would think with the larger figures there was no attempt made for quantitative determinations of the amount of free alcohol in them at all or as to the total amount of alcohol; the larger figures referred to being the 2800 grammes and the 1550 grammes on page 8 of the translation where no decimal point is used. The object of Sturcke in making the experiments with the smaller amounts was to quantitatively determine these points, whereas his object in operating on the larger amounts was to produce sufficient of the alcohols to investigate as to their nature. The saponification of these larger amounts was most probably incomplete, whereas his alcoholic saponification of the small amount was probably more thorough and complete. It is stated that these larger amounts, namely the 800 grammes of carnauba wax and the 850 grammes of the residue which was not dissolved in alcohol, were converted into soda soap; it does not say that they were converted into soda soap by means of alcoholic caustic soda. This being the case I know from 20 my own experience that carnauba wax cannot be completely and thoroughly saponified without the aid of alcoholic soda or potash, by ordinary methods of saponification. Therefore any deductions arrived at from these larger figures cannot be taken in a quantitative way. The object of the investigator was to secure large amounts to experiment on and for purposes of quantitative work he used the smaller amount above referred to and which was used by me in figuring out the 31%. The investigator himself has depended upon the result of his work on this smaller amount for proof of the existence of free alcohol in considerable 30 amounts, because at the end of his work on this smaller amount he makes this statement:

"The presence of free alcohol in carnauba wax can consequently be doubted no longer."

In addition, on page 4 of the translation he says

"Furthermore it is demonstrated by the above determinations that free alcohol, even in considerable quantities is contained therein."

In view of this explanation I would answer ¶Q. 285 as follows: I did not use in my calculations, where I got 31% from 40 Sturcke's figures, the larger amounts mentioned in your question. These larger amounts were converted into soda soap and since he does not mention the use in connection therewith of

alcoholic soda, I consider that the percent. of extract matter obtained on these larger amounts as of no value in any quantitative deductions regarding carnauba wax. The object of the investigator in operating on these large amounts was to produce sufficient of the alcohol to more completely investigate their nature.

Q. 287. Your statement as to your views of Sturcke's object and purpose and as to your own deductions and conclusions are objected to at this time as volunteered and unresponsive. But is it now your opinion that when Sturcke reported the test which he sums up by saying the "total extract quantity from the total quantity of carnauba wax treated (altogether 2800 g.) amounted to about 1550 g.," he had not previously obtained some nineteen hundred odd grammes of the extract containing the ester?

A. I have already referred to the answer that would have to be changed on account of the mistake as to the decimal point which in a previous question you called my attention to. That, of course, would make the figures which I gave as the original carnauba wax, amounting in one case to 1,931 grammes and in the other to 1,957 grammes, which added to the 1,600 grammes,

and I withdraw those figures in that answer. Regarding the material operated on whereby Sturcke gets a total of 1,550 grammes of extracted matter after the saponification, that material then, I believe, included the two lots of 800 grammes each and the 850 grammes of residue after the alcohol treatment which would amount to 2,450 grammes. The original material from which he got the 850 grammes of residue by alcoholic treatment, was derived from 1200 grammes; and 850 grammes from 1200 would give 350 grammes; this amount would mean 2800 grammes of the original carnauba wax. This would appear to give a total of 1,500 grammes of alcohol from the 2,800 grammes of original carnauba wax, but it by no means follows that this amount can be depended upon as quantitative, because, as I have stated before, the two lots of 800 grammes each were not actually weighed; he says "About 800 grammes"; and, furthermore in the saponification of these materials there was not that attempt to make complete saponification that there was when he operated upon the smaller amount. Therefore I would not place any value on these figures as indicating the composition of carnauba wax in a quantitative sense.

Q. 288. I believe I understand your position to be that in this experiment Sturcke had altogether 2,800 grammes of carnauba wax from which he obtained 1,550 grammes of alcohols and hydro carbons, or about 55%; but you think if he had saponified

with the alcohol solution and had completed his saponification and had taken greater pains he would have obtained a higher percentage of the alcohols and hydro carbons?

A. He would have obtained a higher percentage, and he actually did obtain a much higher percentage in the more careful experiment where he operated on the small amount; he there obtained by the extracting of that alcohol, 60.04 per cent. of extracted matter, which extracted matter itself consisted of 78.04% of alcohol, and which residue, after the alcoholic transaction, gave 54.1% of alcohol. In other words, taking the sample of English wax whereby Sturcke gets 60.04% of extract soluble in hot alcohol, disregarding the fraction which amounts to only $\frac{1}{1000}$ that would leave 49% of residue; after the complete alcoholic saponification and extraction of the alcohols, Sturcke obtained 78.04% of alcohols from the extracted portion; or, in other words, he obtained 47% of alcohols in the extracted portion; that is 47% of the 60 per cent. he found was alcohols. Then, in the residue, which was not soluble in water, he found 54.1% of alcohols; 44.1 per cent. of 49%, the 49% being the residue not soluble in alcohol, gives 21.6 per cent.; this added to the 47% gives 68.6% total alcohols found in the original wax in this experiment; that is, it gives at least this much. This of course may be slightly low because it is possible that the original alcoholic extraction was not carried to completion, as those operations are more or less difficult and tedious to carry to completion; and, furthermore, it is known to-day that for the complete saponification of these waxes, like carnauba and bees wax, it is not only necessary to heat them with alcoholic potash or soda, but to heat them with alcoholic potash or soda under slightly increased pressure for at least two hours, and in Sturcke's work there is no mention as to how completely this work was done. Therefore the figures he has given and the figures that are deduced from the figures which he has given, represent the minimum amount of total alcohols contained in carnauba wax, and this minimum amount, as I have before stated is 68.6%.

Q. 289. I understand that you consider the particular statement of Sturcke, where he finds alcohol amounting to 55%, as being unreliable for two reasons, namely, first, because he was not intending to make a quantitative analysis and did not have that purpose in mind, and second, because his saponification was not carried out with an alcoholic solution; are these the only reasons?

A. I would judge anyone who was familiar with work of this kind, as Sturcke must have been, would not attempt to operate

on quantities of such large amounts where he had to perform the operation of extraction, which in this case was a twofold operation of extraction, once by alcohol, in the original carnauba wax and again by petroleum ether on the saponified substances.

Q. 295. Do you understand that this same test in which he says the total amount of carnauba was 2,800 grammes was one single test or the aggregate of three separate tests?

A. The aggregate of three separate tests.

Adjournd until Wednesday, March 20, 1907, at 10:30 o'clock A. M. at the office of Frank L. Dyer, Esq., Edison Laboratory, Orange, N. J.

EDISON LABORATORY, ORANGE, N. J.

Wednesday, March 20, 1907.

Case resumed.

Counsel present as before.

The CROSS EXAMINATION of the witness JONAS W. AYLESWORTH was resumed by Mr. MASSIE:

Q. 291. Do you understand the earlier tests of the two samples, one from England and one from Dresden, and of the portion which was soluble and the portion which was insoluble, respectively, were each one single test only, or the aggregate of separate tests?

A. I understand that these tests represented first two separate tests.

In I he operated on 1.931 grammes accurately weighed, otherwise he would not have carried out to the third decimal, whereby he got 61.6 per cent. of extract. Second, he operated on 1.957 grammes of English wax and thereby obtained 60.04 per cent. of extract. Those two amounts represent the only portions of fresh carnauba wax operated on under these quantitative tests. The third and fourth amounts operated on, given on page 3 of the translation, were not the original carnauba wax, but as he states, 1.939 grammes of the part soluble in alcohol and 1.935 grammes of the part insoluble in alcohol.

I take it that in the third and fourth experiments where he operated on the extract portion of the residue portion after alcoholic separation, the substances which he used were those derived from his experiments I and II on the raw carnauba wax and that in order to obtain sufficient of these materials he made a further separate quantitative experiment duplicating experiments I and II, in which he used 2.54 grammes of carnauba wax and

boiled the same with 750 c.c. of alcohol, thereby obtaining 38.9% of the insoluble portion and 61.1% of the soluble portion. This experiment is a duplicate of the other experiment before referred to and results in almost identically the same percentages. Following this experiment he further acted upon 10 grammes of fresh carnauba wax and repeatedly boiled it out with fresh quantities of alcohol, one-half litre at a time and he states that after the ninth time he obtained 2.95 grammes of dissolved substance in 350 c. c. and at the tenth, practically the same amount, and from these figures and from this experiment he concludes that the ester is soluble in hot alcohol to that extent. This data, together with the experiment where he used 2.54 grammes, gives us an additional method of figuring or calculating the total amount of alcohol contained in the carnauba wax.

When I made my answer to Q. 272 I had not observed this additional data.

By summing up this data we are able to calculate the amount of free alcohols and total alcohols contained, in carnauba wax in a different manner from that given in my previous testimony as follows: When he operated on 2.54 grammes he got 38.9 per cent. unsolved and there must have been dissolved in the 750 c.c. of hot alcohol 61.1%, and since not over 2.95 grammes of ester dissolved in 350 c.c. of hot alcohol the solubility of the ester in hot alcohol would amount to .84 grammes per litre. Therefore there would be in the neighborhood of 25% of ester in the soluble part after extracting that hot alcohol. This leaves 36.1% for free alcohol. This percentage approximates that obtained in the other calculation and gives a further indication of the amount of pure alcohol, while it is not as accurate as the first calculation, because it is based on the solubility of the ester in hot alcohol alone. This solubility might be influenced one way or the other by the presence of larger amounts of free alcohols which are present in the extracted matter; but it is a very close approximation and agrees quite favorably with the other calculation and agrees quite favorably with the other calculation.

After making this experiment Sturck states:

"The ester characteristic and the presence of free alcohol in carnauba wax can consequently be doubted no longer."

I take it that Sturck treated those 2.54 grammes in the same manner as he did the original 1.191 grammes, for the purpose of giving him sufficient quantity of residue insoluble in alcohol,

and extract matter soluble in alcohol to perform the quantitative tests III and IV given on page 3 of the translation, which I have referred to in my answer to *rQ*. . . If we calculate the result of Sturcke's experiment when he uses 2.52 grammes of carnauba we get about the same result as I have given in answer to *rQ* 271, namely, 30.3% of free alcohol, 37.7% of combined alcohols, amounting to 68% total alcohol, which would leave 32% total acids or, in other words, 30.3% of free alcohols and 69.7% of ester. The quantitative experiments made by Sturcke on these smaller amounts are reliable, but his experiments on the larger amounts are not quantitative, and no accurate quantitative deductions can be drawn from them.

My reasons for this statement are as follows: On page 5 of Sturcke's translated article he says that 1200 grammes of wax was digested out in 5½ litres of hot alcohol; in his original quantitative work he used ¾ of a litre on 2.52 grammes. This alone shows that if it was necessary to use so much alcohol in the small amount it would be necessary on this large amount to use a far greater quantity than 5½ litres. He further states that the extract 350 grammes was saponified with 25 grammes of caustic soda and the dry sieved soap extracted by the petroleum ether yielded together, 250 grammes of extracted alcohol, which equals 71.4% of the total matter extracted by the hot alcohol. If this experiment had been quantitative he would have gotten in this result the same figures as he did in the original quantitative experiment with the smaller amounts, namely, 78.4%. This difference is easily accounted for by the method of saponifying; he states that he saponified with 25 grammes of caustic soda, not by alcoholic caustic soda; then he took the nearly converted extracted soap left, containing the balance of 350 grammes of alcohol, extract matter obtained by hot alcohol, amounting to 100 grammes or 28.60% and combined them with the 850 grammes of the part of the 1200 grammes of carnauba wax which was not soluble in hot alcohol and, after previously converting it into soda soap, and extracting by petroleum ether in the same manner as it was done with the smaller portion, he further states that two fresh lots of wax of about 800 grammes each were taken and saponified direct without previous extraction with hot alcohol; the soda soaps from the same were then extracted with petroleum ether the fresh wax portion and the 850 grammes of the part insoluble in alcohol, altogether represent 2800 grammes of carnauba wax from which he got a total of 1500 grammes of wax alcohol, equal to 53.5%; this

much notwithstanding the fact that the wax was imperfectly saponified with caustic soda, only the smaller part of the same being done with alcoholic soda as was done in his quantitative experiment referred to in the answer to *rQ*. . . where the total alcohols obtained from the wax were 68%.

In Sturcke's article he further states that:

"In order to separate the acids contained in carnauba wax the soda salts of acids, that is wax soap, which was left after extracting with petroleum ether, was digested with alcohol. The greater part of the soap was hereby dissolved, then filtered while hot."

From this experiment we are obliged to admit that not all of the soap was soluble in hot alcohol, while, if the original saponification and extraction had been complete and quantitative, this soap would have been completely soluble in hot alcohol. This fact substantiates my opinion previously expressed in this testimony that the operations on these larger amounts were in only a very limited sense quantitative.

Further, Sturcke states on page 9 of the translation that fractionating he obtained 45% of an alcohol having a melting point of from 86 to 86½ degrees C., corresponding to pure myricyl alcohol. From this part of Sturcke's work, which cannot possibly be quantitative, come all these indefinite calculations and statements noted in some of the books in which descriptions of carnauba wax are given.

All of the foregoing answer from and including the words "He made a further separate quantitative experiment duplicating I and II" is objected to as volunteered and not responsive. Any cross examination that may touch on the matters now objected to will be without waiving the objection.

Defendant's counsel further notes that as this examination is being taken stenographically it will be necessary to read the transcript of the foregoing answer before the cross examination thereon, if any, can be made.

rQ 292. Without waiving the objection just made I will ask you to point out the page in the translation in which Sturcke says he made a further separate quantitative experiment duplicating tests I and II.

A. On page 5 of the translation Sturcke says

"In order to examine still further the solubility of the carnauba wax, 2.52 grammes of it were boiled for a

longer period with 750 c. c. of alcohol. Of this there remained undissolved 198 grammes, equal to 38.9%." Sturcke does not specifically state that this is a duplicate, but he treats it in the same manner as he did the lots I and II and therefore it is a duplicate.

xQ. 293. What I am getting at is this, do you understand that the 1,593 grammes of the substance that was soluble in alcohol, which formed the basis of experiment III, and the 1,935 grammes of insoluble substance, whatever it was, that formed the basis of test IV, both referred to on page 3, were obtained from the test you have just now cited from page 5 which was made "in order to examine still further the solubility of the wax"?

A. I would interpret from Sturcke's article that he had derived his material, that is the insoluble part and the part which was soluble in alcohol, from either a combination of those contained in I and II on page 3 or the materials he obtained in the further experiment. I infer this because the materials that are given in III and IV on page 3 are more than those obtained by the extraction by hot alcohol in I and II, and it logically follows that he would want to operate in this experiment on at least about two grammes, since he had used that amount in the first two experiments; and in order to do so it would be necessary for him to extract fresh portions in the same manner as he did in I and II, which he did, as indicated on page 5.

xQ. 294. If I understand you, you assume that before Sturcke could complete the tests with the "carefully weighed quantities (about 2 g.) of the raw carnauba wax and of both the dissolved and undissolved parts thereof," he had to at least begin the tests recited on page 5 which he undertook "to examine still further" the subject.

A. I understand from these results that since he mentioned in III and IV that he used in the one case the part soluble in alcohol and in the other case the part insoluble in alcohol and since he used 1.139 in one and 1.935 in the other that it was necessary for him to extract a greater amount to produce these amounts than he had used in I and II, because the yield from these experiments was altogether somewhat over two grammes of the extracted portion and only 1.5 grammes of the insoluble part. Therefore, since he used in the experiment IV, 1,935 grammes it was necessary for him to produce more of this insoluble part in order to use that weight.

xQ. 295. In speaking of that test which resulted in giving 1550 grammes of alcohol from 2800 grammes of the carnauba, in an-

swer to xQ. 275 you say the saponification was made "by alcoholic caustic soda," whereas, further on (xQ. 286 and xQ. 289) you say that it was not made by an alcoholic solution. Why did you assume in the first instance that it was so made and why did you assume afterwards that it was not so made?

A. In my answer to xQ. 275 the statement as to the alcoholic caustic soda is correct, the alcoholic caustic soda was not actually used, that is, he added 25 grammes of caustic soda to the alcoholic solution of the wax, and in that answer I referred to that portion of the material. In the answers to the other cross questions you have mentioned this material together with the fresh quantity of wax which was not treated with the alcohol previously, was, as stated by Sturcke, converted into sodium soap direct, from which I infer that in this first portion there was no alcoholic soda saponification at all. So that, more correctly speaking, of this whole 2800 grammes of carnauba wax, whereby were produced 1500 grammes of alcohol, only the small portion of the extracted material produced by the alcoholic separation was saponified by the alcoholic caustic soda; but I understand from Sturcke's article that the residues from this alcoholic separation together with the fresh portions of 800 grammes each of carnauba wax, were directly saponified by caustic soda without the aid of alcohol.

xQ. 296. In answer to xQ. 271 you quote Sturcke as saying that the esters existing in the wax are soluble only to a very slight extent in boiling alcohol. Lewkowitch says, does he not, on page 872 that:

"Carnauba wax dissolves completely in ether and boiling alcohol; on cooling a crystalline mass of the melting-point 105 degrees C., is deposited from the alcoholic solution?"

A. Lewkowitch states that carnauba wax dissolves completely in ether and boiling alcohol; from that I would interpret that he means a mixture of ether and boiling alcohol.

And he further states:

"On cooling, a crystalline mass of the melting-point of 105 degrees C. is deposited from the alcoholic solution."

Judging from Sturcke's experiment I will consider that Lewkowitch obtained by this solution, if he used sufficient of the boiling alcohol, and ether, a solution consisting of free alcohols and the esters contained therein and if it separated on cooling, or deposited on cooling, a crystalline mass that would, if the solvent was boiling alcohol alone, separate a mixture of alcohols and esters, but if the solvent was a mixture of ether and boiling

alcohol I do not know what the solubility of the alcohols that occur in carnauba wax is in such a mixture. But the literature on the subject states that in cold alcohol, myricyl alcohol is practically insoluble, but freely soluble in hot alcohol, whereas the esters that occur in carnauba wax, as demonstrated by Sturcke are only soluble, to the extent of .8 grammes per litre in hot alcohol. Without having the definite quantity of the solvent given any definite statement as to whether the crystalline mass represented all material contained in the solvent, I would not be able to more than guess on the nature of that particular crystalline mass mentioned by Lewkowitsch on the quotation made in your question.

Q. 297. Do you assume that in the passage I just now quoted from Lewkowitsch he mixes cold ether with boiling alcohol and if so in what proportions do you assume he took those two solvents?

A. We cannot assume any proportions. In cases where a mixture of ether and alcohol is used the proportions may vary within wide limits and I would infer that he mixed the two together and boiled them; the boiling could not refer to boiling alcohol and not boiling ether.

Q. 298. I put it to you that the position of the adjective "boiling" indicates that Lewkowitsch means either ether alone or boiling alcohol alone; otherwise he would have said "boiling alcohol and ether"; what have you to say to that suggestion?

A. It might be interpreted as meaning ether or it might be interpreted as meaning boiling alcohol or it might be interpreted as meaning ether and boiling alcohol, meaning in the latter case the two solvents combined in a boiling state.

Q. 299. If the Court should interpret this passage as meaning that according to Lewkowitsch he found carnauba was easily soluble in boiling alcohol alone, how would you reconcile that with Sturcke's contrary report of his investigation.

A. The two statements absolutely cannot be compared because Sturcke in his paper gives definite amounts of the solvents which he used and the results therefrom. This statement of Lewkowitsch gives no amounts and he might have used a barrel of alcohol and dissolved a gramm of the substance.

Q. 300. Do you think it probable that a man of science enjoying the reputation which Lewkowitsch enjoys, if he required a barrel of alcohol to dissolve a gramm of substance would state in his text book as he has stated that the substance "dissolves completely"?

A. Where I mentioned a barrel of alcohol of course that is an exaggerated expression, but I know from experience that car-

nauba wax is not soluble in boiling alcohol, that in order to dissolve it in boiling alcohol it is necessary to have at least one litre of this boiling alcohol per gramm of substance used, the substance being carnauba wax.

Q. 301. Do you think it likely that if Lewkowitsch, in order to dissolve carnauba wax "completely," had to employ a very large quantity of the solvent he would content himself with the simple assertion that the substance dissolved completely in that solvent without explaining that a large quantity of the solvent must be used?

A. In determining matters of solubility by chemists there is always used a very small amount of the substance in a relatively large amount of the solvent where the substance is only sparingly soluble and I consider that since Lewkowitsch makes the statement that the free myricyl alcohol contained in carnauba wax is easily removable by cold ethyl alcohol, he might also make other statements that were not properly considered or in which he is entirely mistaken. A quotation has been given in the testimony in this case regarding the solubility of myricyl alcohol which was taken from the very latest work, in German, on the subject, which makes the definite statement that myricyl alcohol is practically insoluble in cold alcohol. Since Lewkowitsch stated that it could be easily removable by cold ethyl alcohol all of his statements regarding the constitution of carnauba wax could very readily be in error, because if he believed that myricyl alcohol was removable by cold ethyl alcohol by treating carnauba wax thus, he would not remove the myricyl alcohol, and therefore his conclusion that it contained no myricyl alcohol, based on this belief, would be wrong.

Q. 302. Comparing the passage you have just cited from Lewkowitsch with the one I quoted a while back, in the latter Lewkowitsch says that the entire carnauba composition is completely soluble in "boiling alcohol"; in the former passage he names the three ingredients, cerotic acid, myricyl ercetate and myricyl alcohol, and says the last named is easily removable by cold ethyl alcohol. Might not this mean that the two first named ingredients are soluble in cold alcohol, while the myricyl alcohol is not soluble and therefore can be separated out?

A. Not at all. The language of Lewkowitsch's book at page 874 is

"Carnauba wax consists chiefly of myricyl ceretate and small quantities of free cerotic acid and myricyl alcohol; the latter is easily removable by cold ethyl alcohol."

When he speaks of the latter, according to my interpretation of the grammar, he means the free cerotic acid and the myristyl alcohol.

¶Q. 303. That is, he takes these two subjects for the singular form of the verb, namely "is" instead of saying "the latter are easily removable"?

A. No, strictly speaking I should say, on account of the singular verb, that he meant the myristyl alcohol, and that the myristyl alcohol would be removable by the use of cold ethyl alcohol and from my knowledge of these substances I know that it could not be the converse of this, that the myristyl cerotate would be removed by its solubility in cold ethyl alcohol, because even in hot ethyl alcohol, the myristyl cerotate is only soluble to the extent of eight-tenths of one per cent.

¶Q. 304. Sturcke discovered, did he not, a hydroxy acid present in carnauba wax which is cited by Lewkowitsch on page 874?

A. He did.

¶Q. 305. Will you please give the combining weight of this acid?

A. I have figured the combining weights; the acid which Sturcke in his article calls dicarboxylic acid, he mentions as one of the components of carnauba wax, Sturcke also gives a hydroxy acid; this I have not figured the combining weight of. The combining weight of the dicarboxylic acid mentioned by Sturcke is 168. The presence of this acid would account for the high saponification number given by Lewkowitsch, as, if the carnauba wax contained for instance 10 per cent. of this acid, it would be sufficient to give carnauba wax a saponification value of 33.3; the saponification of this dicarboxylic acid being 333 approximately. This acid, in addition to the hydroxy acid mentioned and the lignoceric acid would make it impossible to calculate from saponification values the cerotic acid in carnauba wax; it would only be possible to use for the saponification value the calculations, if we knew the exact amount and nature of each acid present in the substance.

All of the foregoing answer that refers to "dicarboxylic acid" is objected to as volunteered and not responsive.

¶Q. 306. In the translation of the Sturcke article at next to the 40 last page he says does he not

"Finally I will give a recapitulation of the substances demonstrated in carnauba wax.

1. * * 2. * * etc.

7. An acid (giving its formula), an oxy-acid, or possibly its lactone (giving its formula) with a melting-point of 103.5 degrees; from this the dicarboxylic acid (giving its formula) with a melting-point of 90 degrees, was produced?"

A. Yes, that is correct.

¶Q. 307. And on page 874 Lewkowitsch refers to this as

"A hydroxy acid (giving the first formula given by Sturcke) or its lactone, (giving the second formula given by Sturcke)?"

A. That is correct.

Adjourned until Thursday, March 21, 1907, at the office of Frank L. Dyer, Esq., Edison Laboratory, Orange, N. J., at 10:30 A. M.

OFFICE OF FRANK L. DYER, ESQ., ORANGE, N. J.

THURSDAY, MARCH 21, 1907.

Case resumed pursuant to adjournment.

Counsel present as before.

The CROSS EXAMINATION of the witness JONAS W.

AYLSWORTH is resumed.

¶Q. 308. Now will you please give us the combining weight of what Sturcke calls the oxy-acid and what Lewkowitsch calls the hydroxy acid?

A. The molecular weight is 342. If this acid is monobasic its combining weight is the same, 342. I think this is a monobasic acid, this combining weight would give a saponification value of 164.

¶Q. 309. In answer to ¶Q. 305 did you assume that in the 30 language quoted in ¶Q. 306 Sturcke meant to say that the dicarboxylic acid existed as such in the carnauba wax?

A. Sturcke mentions this acid in the list of substances which he found and identified as present in carnauba wax and on that account I considered it to be present in the wax, but on looking back through his article I find that he produces this dicarboxylic acid from another substance in order to identify the nature of the acid from another substance, so that this acid does not apparently occur in the carnauba wax itself.

¶Q. 310. The apparently high saponification value given by 40 Lewkowitsch has been cited in this case as contradicting Lewkowitsch's statement as to the smallness of the amount of myristyl alcohol present in carnauba. Would the presence of this hydroxy acid tend to reconcile the two statements by Lewkowitsch?

4. The presence of this hydroxy acid, also of the various other acids, found by Sturcke, also of the various alcohols found and identified by Sturcke, together with the possibilities of other bodies in carnauba wax, not identified by Sturcke, would account for the high saponification value, and for the discrepancies which are apparent when figuring the acid contents of the carnauba wax from this saponification value and for the discrepancies between the statements by Lewkowitsch of the very small percentage of free myricyl alcohol and by others of the large percentage of free myricyl alcohol.

On account of the combining weights of these numerous bodies it is impossible to figure with accuracy either the acid contents of the wax, or the alcohol contents of the wax when using the acetyl value and the saponification value. In all such figures there has to be assumed that the acid is some particular acid, or the alcohol is some particular alcohol, and unless this assumption is taken, which of course is only an assumption, since we know that carnauba wax consists of a variety of substances, there is no way of arriving at accurate figures of the total acid contents, or the total alcohol contents, except by the deductions which are drawn from Sturcke's quantitative tests before testified to in this case by me as I, II, III and IV, and the next succeeding experiment after these four. Of course, if the exact percentages of the various bodies were known and their exact formula and acidic properties, or basic properties in the case of alcohols, then it would be possible to accurately figure the total amount of acid. But if we already knew these percentages there would be no object in doing this. For instance, the presence, we will assume, of 10% of the hydroxy, which was referred to in the previous answer, would account for a part of the high saponification value given by Lewkowitsch and others, also if instead of the hydroxy acid the body were a lactone, or some of both, then that would affect the saponification value in the same way. Likewise, on the other hand, the character of the alcohols would affect the acetyl value and give a somewhat higher figure in that case than would be the case if we considered these alcohols to be entirely myricyl alcohol or these acids to be entirely cerotic acid, which, in the previous calculations made by Dr. Stillman, I understand was assumed.

Carnauba wax is a very complex substance; its entire composition has never been accurately determined in every detail. But, as to the questions involved in this suit, lying aside all questions of theory and all calculations from formulae, the experi-

ments made by Dr. Stillman whereby he obtained water, indicating a reaction, and whereby he found that a certain quantity of stearic acid disappeared in combination with carnauba wax, or some part thereof, are, together with my own experience during analyses and various experiments, and the quantitative experiments given in Sturcke's translated article together with the acetyl value given by Lewkowitsch and others, very conclusive proof to my mind of the presence of considerable quantities of free myricyl alcohol in the carnauba wax, and that this myricyl alcohol reacts in the manner set forth in the patent.

Q. 311. Please refer to Sturcke's experiments I and II on page 3 of the translation; I understand that if we consider these as two parallel experiments, take the average and disregard the decimal fractions; Sturcke found 60% of the carnauba wax to be alcohols and 40% to be acids. Is that correct?

A. No, that is not correct. My understanding of it is that the experiments I and II represent the results of alcoholic extraction because he says after this experiment:

"Further verifications showed that the extract quantity of the part dissolved in alcohol considerably exceeded that of the raw carnauba wax and the latter in its turn exceeded the extract quantity of the unsolved part."

Then, on page 5, at the beginning of the next experiment on the 2.52 grammes, he says,

"In order to examine still further the solubility of the carnauba wax 2.52 grammes of it were boiled for a longer period with 750 c.c. of alcohol; of this there remained unsolved .98 grammes, equals 38.9 per cent."

Since this percentage corresponds almost identically with the extract amount given in I and II, I believe that the interpretation of I and II as being the alcohol extraction is correct, although it might seem from the printed descriptions, which come before these four experiments, to mean that these portions of wax had also been saponified with alcoholic soda. I would judge more by the reading of the experiment on page 5 of the translation as to the figures and as to the amount which was dissolved in alcohol; than by the reading of the printed matter which in these German translations is not always very clear.

Q. 312. In carrying out experiments I and II, which will consider the same experiment, Sturcke took "raw carnauba" which we will assume to consist of three classes of bodies; namely, free alcohols, free acids and esters (consisting of com-

bined alcohols and acids). What was the first step that Sturcke took?

A. From the interpretation of the experiment in Sturcke's article as just described in my last answer I would judge that the first steps would be to select the materials and powder them and weigh them and then extract with hot alcohol in suitable extracting apparatus.

Q. 313. After he has weighed out the raw carnauba the first thing he tells us he does is saponification with alcoholic solution and caustic soda, is it not? A. No sir; he states that,

"Carefully weighed quantities (about 2 g.) and the raw carnauba wax

then there is a comma, after the word "wax"

"and of both the dissolved and undissolved parts thereof, in all four portions were saponified with the alcoholic solution of caustic soda."

He says "both the dissolved and undissolved parts thereof"; since "both" can only refer to two, since he specifically mentions the dissolved and undissolved parts thereof, I cannot see how it can be interpreted that the raw carnauba was also saponified with alcoholic potash, although I will admit that the wording is here not very clear. As I have said before, this is easily accounted for by the difficulties encountered in translating German.

Q. 314. As I have already noted, the interpretation of the language is a matter for the Court, but do you understand that the four different bodies, namely, the sample of English wax, the sample of Dresden wax, the dissolved substance and the undissolved substance, were all four of them saponified together?

A. No, I do not so understand it.

Q. 315. Do you understand that each of them was taken as a basis for a separate test, and that the first step in this test, after each body was weighed out carefully, was to saponify it with an alcoholic solution of caustic soda?

A. No, I do not so understand it.

Q. 316. Do you understand that a carefully weighed quantity (about 2 g.) of the raw carnauba wax was not saponified with alcoholic solution?

A. Yes, I understand that in the cases of I and II they were not saponified at all with alcoholic caustic soda.

Q. 317. Please read into the record the paragraph referred to.

A. (Paragraph read as follows):

"In order to obtain information about the part of the carnauba wax dissolved in boiling alcohol, as well

as about the part which was not dissolved, carefully weighed quantities (about 2 g.) of the raw carnauba wax, and of both the dissolved and undissolved part thereof, were saponified with an alcoholic solution of caustic acid, the allylic alcohol was distilled off after addition of water, the soapy jelly was precipitated with a solution of sodium chloride, then filtered, combined and extracted in a Thoms extraction apparatus with petroleum ether, volatile at 75 degrees to 90 degrees C., whereupon the extract quantities which were dried at 110 degrees, were determined."

Q. 318. Do you understand that "both the dissolved and undissolved part thereof" were saponified together; or was each separately saponified?

A. I understand that each was separately saponified.

Q. 319. Will you please assume that the passage just read by you in answer to Q. 317 should be construed to mean that the raw carnauba wax was separately saponified with an alcoholic solution of caustic soda. Then, what is the next step that the Sturcke article describes in carrying forward test I and II?

A. I do not care to follow a line of reasoning in a matter of this kind on an assumption which I do not understand as being correct.

Adjourned until Monday, March 25, 1907, at the office of Frank L. Dyer, Esq., Edison Laboratory, Orange, N. J. at 10:30 A. M.

ORANGE, N. J., Wednesday, March 27, 1907.

Met pursuant to agreement.

Present, Counsel as before.

The CROSS EXAMINATION of JONAS W. AYLSWORTH was continued by Mr. MASSA.

Q. 320. During our last session complainant's counsel, off the record raised some question as to the translation of the Sturcke article and you were to look into the matter more carefully; have you done so and have you considered the meaning of the passage we were examining?

A. Yes, I have gone over this translation very carefully with Dr. Langmuir, he reading from the original German and I following from the translation, and this translation appears to be entirely correct.

Q. 321. I again call your attention to the passage quoted in

answer to *Q. 317*. What do you now understand was the first thing done to the "raw carnauba wax"?

A. It would appear from the wording of the translation and from the original article that the raw carnauba wax had been saponified with alcoholic caustic soda, and likewise the parts which were obtained by an extraction with hot alcohol. The interpretation of this translation in this particular is of no consequence in the calculations that I have made in the previous testimony because the per cent. of extract matter given in Experiments I and II happen to be identical with the per cent. obtained by alcoholic extraction, as is clearly stated on page 5 of the translation where the author says:

"In order to examine still further the solubility of the carnauba wax, 2.62 grams of it were boiled for longer periods with 750 c.c. of alcohol; of this there remained unsolved .98 grams equals 38.0%.

Therefore, if 38.0% were not dissolved, 61.1% must have dissolved, which amount is identical with the amount obtained in Experiment I. In making the previous calculations where I obtained 31.4 per cent. free wax alcohols the figure adopted for the parts soluble in alcohol was 60% and for the parts not soluble in alcohol it was 40%.

All but the first clause of the above answer (down to the word "likewise") is objected to as volunteered and not responsive.

The witness is cautioned that if he persists in answering matters not inquired about it will prolong the cross-examination indefinitely.

Q. 322. Assuming, as you have done, that the raw carnauba wax consists of three classes of bodies, namely, free acids and combinations of alcohols and acids, constituting esters; upon saponification with the caustic soda the result would consist of three classes of bodies would it not, namely, the solvent employed with the caustic soda, the soaps formed by the soda and the acids (both those originally free and those that were in combination), alcohols, which latter would comprise both the free alcohols and the alcohols that had formerly been in the esters.

A. Assuming that the reactions of saponification were carried to perfection, that is to say that the saponification was complete and that all acids of esters were combined with the soda, then there would result the classes of bodies stated in your question, namely, free fatty alcohols, the soda soaps of the fatty acids and the solvent used.

Q. 323. Assuming that the saponification has been carried out perfectly and is complete (as to which I will give you an opportunity later to express your views) I understand that all the acids would have combined with the soda and that there would be no free acids, and that all the alcohols will be free, that is, there are none left in combination with esters.

A. That is correct on that assumption, and assuming the carnauba wax to consist only of free alcohols, free acids and esters.

Q. 324. After saponification of the raw carnauba wax what is the next step which Sturcke says he took in experiment I?

A. He separated the resultant soap and fatty alcohols from the solvent.

Q. 325. He then had a mixture consisting of these soaps and the fatty alcohols, and upon the assumption that the carnauba wax was as already stated, and that the saponification was complete, there was nothing else but soaps and fatty alcohols left. What was his next step.

A. His next step was to separate the resulting soap from the water which was used in removing the alcohol solvent and then drying that soap mixture and extracting, after drying, with 20 petroleum ether.

Q. 326. I would like to follow the language of Sturcke a little more closely. After saponification he says first "The alcohol was distilled off after addition of water." As I understand that he first adds water and then distills, and that after distillation, he would have left the soaps, the fatty alcohols and the water. The next step is precipitation of the soap jelly with a solution of sodium chloride and then filtering and drying, which I understand to mean adding common salt and having the soap precipitated which gives as before the soap, the fatty alcohols and the water; and that upon filtering the soaps remain while the water and the fatty alcohols pass away; is that correct?

A. No, the latter part of that question is not correct. The soap and the fatty alcohols together are precipitated by the sodium chloride treatment and remain on the filter; it is, however, possible that this separation is not exactly complete as the presence of some fatty acids in combination with soda are not readily precipitated by the sodium chloride treatment.

Q. 327. We have then on the filter our soda soap and the total of our alcohols (including those originally free and those that were originally in esters,) assuming always that the saponification had been complete in the first instance? *A.* Yes.

Q. 328. That extraction in the Thorn apparatus, what is that, and what does it give us as the result?

A. The extraction by the Thorn apparatus was, petroleum ether extracted the fatty alcohols from the soap mixture; in this particular the amount of extract obtained can be only the minimum amount of the alcohols which were originally free and which were set free by the saponification, assuming the saponification was complete, because Sturcke mentioned in another part of his article the difficulty met with in performing this extraction.

It is not likely that in any of these experiments his extraction of these alcohols contained in the soap mixtures was entirely complete, because the least traces of moisture, which he found later, affected this extraction by causing the soap to become jelly-like and preventing the complete action of the solvent. Assuming that the conditions of the experiment were absolutely perfect and that the extraction was carried to the utmost limits, then there would result a separation of all of the fatty alcohols present in carnauba wax from the soda soap of the acid present in the carnauba wax.

Q. 329. Then, if we assume, first that the carnauba consisted of three classes of bodies named and did not have any resinous or other bodies present, and if we assume, second, that the saponification was carried out completely and also the succeeding steps were carried out to perfection, the extract matter which he obtained in test I consisted of the sum total of all the alcohols and was about sixty per cent. Is that correct?

A. Assuming the three steps to be carried to perfection then there would result a separation of the total amount of alcohols contained in the carnauba wax from the acids.

Q. 330. Upon the three assumptions named in my previous question the total amount of alcohols in carnauba wax would be about 60% and the total amount of acids would be about forty per cent.

A. That would be the result obtained in experiments I and II assuming those things and assuming that we have correctly interpreted the steps followed by Sturcke.

Q. 331. Now consider that the first step by Sturcke, the saponification, was not performed with a boiling alcohol solution of caustic soda and was not carried out under pressure, that would leave in our mixture not only the soaps and the free alcohols (consisting of those originally free and those set free)

but also some esters, would it not? A. Yes, that is correct.

Q. 332. After we have distilled off the solvent that contains the caustic soda and have added sodium chloride to precipitate the soaps and the fatty alcohols, what effect would this have on those esters which remain unbroken up by the saponification.

A. They would go with the fatty alcohols and the soap mixture.

Q. 333. So that when we have filtered and dried and subjected to extraction with petroleum ether, the mass to which the petroleum ether is applied, consists of three classes of bodies, soaps and fatty alcohols and also our esters. What happens to the esters upon the petroleum ether application?

A. The esters would possibly be partly dissolved by the petroleum ether and the higher esters would not dissolve in the petroleum ether and would remain in the residue. By "higher esters" I mean the higher carbon compounds such as the higher carbon acids, combined with the higher carbon alcohols.

Q. 334. Is it your opinion that some esters (those which you have classed as the "higher esters") do not dissolve in petroleum ether, and if so what is your authority or reason for this?

A. From my own experience I conclude that the esters present in the body would remain in the residue unless the petroleum ether were boiling, in which case the esters would be possibly more or less completely dissolved.

Q. 335. In the passage from Sturcke read in answer to Q. 317, he adds, after the word ether, "volatile at from 75 degrees to 90 degrees C" what is the significance of this phrase?

A. That phrase points out the particular quality of petroleum ether used. Petroleum ether comes in a number of different grades which are volatile from about 40 degrees C up to the boiling point of water and the particular petroleum ether which Sturcke used in this experiment was that grade which has a boiling point of from 75 to 90 degrees C.

Q. 336. Can you tell us how petroleum ether of the grade here roughly indicated by Sturcke acts in dissolving esters as compared with petroleum ether of lower boiling point on the one hand or higher boiling point on the other? A. No, I cannot.

Q. 337. Returning now to Q. 333, assuming that some of the esters which had not been broken up by the original saponification, should be dissolved in petroleum ether along with the fatty alcohols, then the above 60% of extract which Sturcke found would consist, not of alcohols alone, but also of some esters containing acids; is that correct?

A. They might contain small traces of the esters, but judging from the extract quantities obtained in experiments I and II as compared with the percentage of total alcohols present as calculated from his other experiment on page 5 of the translation

where he operated on 2.52 grams, I would conclude that the unsaponified esters, if present at all, in the result of these experiments would be found chiefly in the part that was not extracted. I come to this conclusion from the following calculation of his experiment on page 5 of the translation which I have referred to, where he operated on 2.52 grams, the calculation clearly stated is as follows:

Operating on 2.52 grams of carnauba wax with 7.50 c. c of boiling alcohol, 61.1% is dissolved and 38.9% is undissolved. Then, in experiment IV he finds that 54.1 per cent of alcohols was separated from the part that was not soluble in hot alcohol; consequently that part which was not soluble in hot alcohol consisted of 54.1 per cent. of combined alcohols and 45.9 per cent of combined acids. Then in experiment III he found that 78.4% of alcohols was extracted from the part of carnauba wax which is soluble in hot alcohol. Therefore the part which was soluble in hot alcohol must have consisted of 78.4% of both free and combined alcohols, and 21.6% of acids. Therefore, of the 38.9 per cent. in the experiment on page 5, which was insoluble in alcohol, 21% is wax alcohols and 17.9% is acids, and of the parts soluble in alcohol, namely, 61.1%, 78.4% of which is alcohols, equals 47.9%; and 21.6% of this 61.1% was acids that were in combination in the esters contained in this part of the carnauba wax which was soluble in hot alcohol. Hence, 21% of wax alcohols in the insoluble part, and 47.9% of wax alcohols in the soluble part, equals 68.9% total alcohols in the wax and since this result, 68.9%, is very much higher than the total alcohols that were obtained in Experiments I and II, therefore I would conclude that either the saponification was incomplete and some of the esters had remained unextracted, or that some of the liberated alcohols were so locked up in the soap mixture that they themselves were not extracted by the petroleum ether. From these different experiments we find 68.9% total alcohols in the wax; therefore, there must have been 31.1% of acids in the wax. The ratio of acids to alcohols, as found in the ester by Sturdeck's Experiment IV is 45.9% acid, to 54.1% alcohol; then, according to this ratio, there would be combined with the 31.1% acid, 36.6% combined alcohols, which, deducting the 68.9% would leave 32.3 per cent. of free alcohols.

All but the first clause of the above answer, down to the words "but judging," etc., is objected to as volunteered and not responsive and as prematurely immaterial.

Since this testimony is being taken stenographically defendant's counsel would desire to see the transcript before undertaking to cross-examine upon this answer, such examination, if any, being of course *de bene esse*, without waiving the objection.

“Q. 338. Please go back again to the beginning of experiment I and assuming that our carnauba wax contained, besides the three classes of bodies already named, resinous bodies and other substances. If the steps named by Sturdeck be followed out, beginning with the saponification, what happens to these other bodies and what becomes of them?”

A. Resinous bodies have generally acid properties; they would therefore be combined with the caustic soda and would remain with the soap, as a part insoluble in the petroleum ether. Other bodies which might be present would be the hydro-carbons, which would of course go with the alcohols in the petroleum ether solution. Other bodies which might be present in the lactone, which is converted by the saponification into the salt is a hydroxy acid and consequently would go with the soap.

“Q. 339. To wind up experiment I as far as we have gone, if we assume first that the raw carnauba wax contains nothing but acids and alcohols (free and also in combination with esters) and if we assume that the saponification is carried out completely, and if we assume that the subsequent steps, including extraction, be carried out perfectly, then you understand that Sturdeck obtained 60% in round numbers of total alcohols and 40% in round numbers of total acids. But if you assume that there were other bodies present in the carnauba wax, then the resinous bodies will affect the total percentage in one direction and the lactone would affect it in the other direction, and the hydro-carbons would affect it in the same direction, so as to vary this percentage. And again, if we assume that the saponification was not completely carried out, some of the unsaponified esters would diminish the percentage of total alcohols found, while others might increase it. Is that substantially correct?”

A. No, that is not substantially correct. Under those assumptions what would take place would be that, first, there would not be complete saponification, the majority of the esters would go on the side of the acid determined in the experiment second, the resinous bodies of the lactone would go on the side of the acid percentage determined by the experiment; third, the hydro-carbons would go on the side of the alcohol percentage as determined by the experiment.

¶Q. 340. Does it not seem to you to be the fact that this Sturcke article is somewhat vague, and, considering separately his different tests we reach somewhat inconsistent results?

A. I consider the Sturcke article as a highly scientific production, but in all work of this kind of analyses of organic substances there is not that sharp quantitative determination possible which is possible in inorganic analyses, and that the result of none of the experiments can be taken as exactly quantitative, but they can be taken as approximate quantitative results and they show rather the minimum amounts of combined and free alcohols than the whole amount of the same, and the errors of these calculations are rather in favor of more alcohol being present than were found in the determinations, than the reverse.

¶Q. 342. Please refer now to Sturcke's experiment IV. The basis of this experiment is something less than two grammes of something "insoluble in alcohol;" what does that something consist of?

A. That something could consist of only the esters present in the carnauba wax, because it is well known that the free alcohols and free acids are soluble in hot alcohol. It does not follow from that, that it represents all of the esters contained in carnauba wax, because the results of the experiments show that some of the esters were also in the part soluble in the hot alcohol, but it does give a fairly accurate example of the constitution of the esters that are contained in carnauba wax.

¶Q. 343. I understand that you gather from Sturcke's article that this substance forming the basis of experiment IV consists of the bulk of the esters which are a fair sample of the aggregate esters; and that without regard to the nature and amount and combining weight of each of the different acids in those esters, or of each of the different alcohols in those esters, the aggregate combining weights of the acids as a class and of the alcohols as a class, are found by Sturcke to be from 45.9 to 54.1?

A. Yes sir, that is correct. That ratio of acid to alcohol would more nearly approximate the actual truth in regard to the esters than any calculations that are based on molecular formulae.

¶Q. 344. What do you say is the percentage of free acid or free acids in carnauba wax?

A. I have never determined this percentage of free acids but from the acid value given by Lenkowitzsch it might be calculated, but, if so, the acid would have to be assumed to be a certain acid; therefore there is no positive way of arriving at the exact amount of free acid. In the experiments which have been

referred to in the testimony of Professor Stillman where the determination was calculated from the amount of soda it took to neutralize the acids of carnauba wax which was rather higher than those published in the book of Lenkowitzsch, these variations are most probably due to the method of determining the acid value as well as due to variations in the particular samples that were operated on.

The very latest determination of acid value of carnauba wax is given by Radcliffe in the Journal of the Society of Chemical Industry, Vol. 25, 1906, page 458. He gives the value more in accordance with Professor Stillman's determination; he gives the value of 2.9, and a saponification value of 88.3. The utter unreliability of saponification values and acid values for calculating the contents or composition of carnauba wax is indicated by this same writer, Radcliffe, who gives the saponification value of the grade of carnauba wax known as Carna, as 88.3 and for the same wax, bleached, he gives a saponification value of 33; this indicates that there is present in the raw carnauba wax something or some acid which has a very high saponification value, whose nature is not known. Further, this same author gives an iodine value of 13.7 which is indicative of the presence of a considerable amount of some unsaturated bodies. The iodine value for myricyl cerotate should be practically nil. The iodine value for bees wax is given by Lenkowitzsch as from 7 to 10.

A further example of the unreliability of saponification value in calculating the composition of carnauba wax is indicated by the high saponification value given by Lenkowitzsch, page 675 for flax wax which is given as 101.5 and in the same table he gives the percentage of alcohols and hydro-carbons contained in the same as 81.22%. Hence, here we have a saponification value of 101.5 for a compound which has as much as 81.3% of alcohols and hydro-carbons, or, in other words, for an acid contents of 19% we have a saponification value of 101.5.

¶Q. 345. In the beginning of the rebuttal proof complainant's witnesses seemed to have assumed that the alcohol in carnauba wax, or certainly the bulk of the alcohol, consisted of myricyl alcohol, and in like manner, the acid, or the bulk of the acids, consisted of cerotic acid and therefore the ester, or the bulk of the ester, consisted of those two specific bodies, and Professor Stillman figured upon this basis something like 7% of free acid. In the next place Prof. Stillman discredited Lenkowitzsch's statement on the ground that various figures of the latter were in-

consistent with each other and inconsistent with the reports of other writers; although during your cross examination you have stated that the presence of other bodies would tend to reconcile these inconsistencies. Lewkowitch gives the acid value, and Prof. Stillman has stated off hand that the free acid in carnauba was between one and three per cent. In view of all these matters, and of the answer which you have just given, according to your best judgment what would you be willing to assign as the percentage of free acid or acids in carnauba wax?

- 10 *A.* The figures given for the content of various bodies in the book of Lewkowitch are undoubtedly accurate determinations with the particular methods used. But the presence of unknown bodies would greatly affect the value found for these constants. Since all these authorities find such a high saponification value for carnauba wax, therefore it is reasonable to suppose that there must be an acid body present in carnauba wax of very low combining weight, that is a body of low molecular weight, or possibly a body of higher molecular weight, which would be bivalent, or even trivalent in its action. It is impossible to tell whether the acid value given to carnauba wax is due to one of these unknown
- 20 acid value given to carnauba wax is due to one of these unknown bodies or whether it is due to cerotic acid and in all of these calculations, it has of course been assumed to be cerotic acid. But if it were an acid having a very low combining weight, the acid values given by the different authorities would represent an extremely small percentage of free acid. Figuring the body as cerotic acid would give the maximum quantity of free acid possible, because that acid has the highest combining weight of any of the acids known to occur in carnauba wax, or at least, approximately the highest; there may be one of the other acids
- 30 mentioned that is possibly higher in combining weight than cerotic acid.

Q. 346. What, if anything, do you know as to the amount of these various bodies present in carnauba wax, myricyl alcohol, cerotic acid and the combining of the two latter.

A. There is no accurate data concerning the amount of these various bodies in carnauba wax, but there is a fairly accurate indication of the amount of free alcohols which is indicated by the acetyl value found by Lewkowitch and others.

- 40 *Q.* 347. There seems to be no question of the presence of the free acid or acids at any rate. Assuming that the bulk of the free acids consist of something other than cerotic acid, then a comparatively small percentage would be allotted for the free acids and the percentage attributed to the acids in combination would be larger if the free acids were mainly cerotic acid?

A. Yes. On account of the uncertainty of this percentage of free acid present in carnauba wax, in making my calculations for the percentage of free alcohol I have assumed that all of the acids present in carnauba wax were combined.

Q. 348. Did not Prof. Stillman's titrating tests demonstrate conclusively that there was free acid present, never mind what the per cent., or what the nature, of the acid?

A. Yes, it did, undoubtedly.

Q. 349. Professor Stillman, upon the assumption that his free acid was cerotic acid, found that there was about 7% of free acid. Is it correct to say that if his acid, instead of being cerotic acid had been a bivalent acid, Professor Stillman's test would show about one-half of that percentage, or about 3½% of free acid. *A.* That is correct.

Q. 350. And if the free acid was a trivalent acid then we would take one third of seven per cent., or something over two per cent., as the amount of free acid? *A.* Yes, that is correct.

Q. 351. As I recall the testimony there is no evidence of the presence of any bivalent or trivalent acid, but the evidence goes only to the extent of suggesting that these bodies may be 20 present. In view of this and also of any other source or information or belief would you be willing to accept say 3% as the amount of free acid or acids present?

A. I would not be willing to accept any percentage for the amount of free acids from the evidence; but we could assume 3%.

Q. 352. That is, we could assume this without doing any great violence to such evidence as we have before us, are you willing to go so far as that?

A. For the purposes of argument we might assume any figure. 30 We can safely assume anything between one and three per cent., which amounts are given in the literature. There is no specific evidence as to the presence of acids of low combining weights, yet there is very strong evidence of their existence in the carnauba wax, which is indicated by the high saponification value given by the different authorities, and Sturcke's article by no means can be considered as a total quantitative, or even a total qualitative analysis of carnauba wax; he simply stated what he did find and there is no data given by which it could be inferred what other substances might be present in small amounts.

40 *Q.* 353. Upon the assumption of the presence of certainly a bivalent acid and possibly other bivalent, or even trivalent, acid, are you able to say whether all of these acids (not cerotic acid) are free?

A. I would be unable to tell whether they were free or in combination.

*Q. 354. If any of these acids of the low combining weights are present in the esters does that mean that each portion of such acids would take up a larger amount of alcohol than the same amount of croctic acid would take?

A. Yes, they would take up more than would be the case with croctic acid.

*Q. 355. If we have determined the total amount of alcohols (both those originally free and those liberated from the esters) and if we assume the presence in the esters of some of these acids of low combining weights, would that not reduce the amount of free alcohol?

A. In my calculations for the amount of free alcohol the ratio of acid with alcohol found by Sturcke in experiment IV was taken in preference to my assumed values, and on the basis of that ratio, the percentage of free alcohols were calculated. Consequently the presence of bivalent or monovalent acids would have no bearing as to accounting for combined alcohol, because the actual conditions found by experiments were used in these calculations.

Answer objected to as not responsive.

*Q. 356. The question is, if we have determined the total amount of all the alcohols and if we assume that of the acids some parts consist of these acids of low combining weight, and that these latter acids are present in the esters, would not that result in a smaller percentage of free alcohol than if our acids were croctic acid only.

A. I would not place much value on deductions arrived at in this matter, because there are too many assumptions. In experiments I and II, even assuming that carnauba wax was initially saponified with alcoholic soda and that the various steps of the process were carried on to perfection, the most that could be depended on from that experiment would be that there was present 61% total alcohols and 39% total acids. In order to figure anything further from this result it is necessary to bring in a lot of complicated assumptions and the results would be very uncertain.

Answer objected to as not responsive.

*Q. 357. I put it to you to consider two cases, first, we find .61 parts of total alcohols and thirty-nine parts of total acids, and assuming that the acid is croctic acid (or other acids of the same combining weight) and that this acid unites with a certain

amount of our alcohol to produce esters, leaving an easily calculable percentage of free alcohol; then assume, second, that some of this 39% of total acids consists of the acids of low combining weight which enter into the ester combination—the question is, would not those later assumptions give a smaller percentage of free alcohol than the first assumption in this question?

A. In order to answer that question correctly it would be necessary to take into consideration whether or not there are not present among the alcohols some glyhric or bivalent alcohol, since Sturcke found alcohols of this nature present in carnauba wax; in order to answer your question we would have to assume that they did not exist because if they did exist they would greatly modify the results and if there existed in some percentage such bivalent acidic substances, one would just about offset the other and not knowing the percentage of either present we would have to have the question express the assumption that these alcohols are not present or that they are present.

Adjourned until Monday, April 8, 1907, at 10:30 o'clock A. M. at the office of Frank L. Dyer, Esq., Edison Laboratory, Orange, N. J.

ORANGE, New Jersey, July 17, 1907.

Met pursuant to agreement.

Present—Counsel as before.

THE CROSS-EXAMINATION of Mr. AYLWORTH is resumed by Mr. MASSIE:

Defendant's counsel gives notice that under the stipulation heretofore made, he will print as part of defendant's record herein, the license agreement between the American Graphophone Company and National Phonograph Company *et al.*, dated December 7th, 1896, together with some or all of the patents under which the said Graphophone Company is thereby licensed.

Defendant's counsel likewise gives notice that he will read in his record in this case extracts from the Macdonald Note-books made exhibits in the companion suit No. 10 on the Macdonald Composition Patents of 1898—the entries referred to relating to the use of carnauba wax.

*Q. 358. I note that in your testimony you emphasize the difference between the art of molding cylinder-sound records and molded records on the one hand, and the art of molding blanks

and of producing cut originals or cut duplicates on the other hand. And I understand it to be your belief that the quality and properties in which your patented composition differs from your ordinary blank composition, are of importance only in the molded record art. Is that correct?

A. That is substantially correct. The difference in the molding properties of the patented composition and the blank composition render the former decidedly successful for its purpose, but for the purpose of recording by cutting in the patented composition while it might be used as a blank composition, is not as desirable as the old blank composition itself.

Q. 359. For the purpose of the present discussion we may regard the art of making blank cylinders, and of making records therefrom (either original records or mechanical duplicates) as one branch of the art; and the art of making molded cylinder records as another branch of the art. And comparing your patented composition with the regular blank composition, the patented composition has no superior advantages or utility over the old composition except for the molded record branch of the art?

A. We cannot at the present day regard the mechanical duplicating as one branch of the art and the molded record as another branch of the art, because the molded record at the time of its adoption, superseded the old and inferior process of mechanically made duplicates. If the molded record art were not in use and the mechanically made duplicate art were in use, then it would be a question for experimental demonstration whether the patented composition would be advantageous over the blank composition or not. It would certainly have some advantage as to the wearing, but whether the disadvantages of more imperfect cutting of the patented composition would offset the advantage of wearing, would be a matter of experimental demonstration.

Q. 360. Please assume that we have your patented composition and are engaged solely with making blank cylinders to be used for making original records directly upon the phonograph. Would your last answer be the same, namely that the patented composition would have better wearing qualities and would have possibly inferior cutting property? A. Yes.

Q. 361. Then is it not the fact that for the patented composition to be of any utility over the prior composition, it must be used in what we are now distinguishing as the molded-record art?

A. No, I rather think that if we did not have the molded

record art and were making original records, that the improved wearing properties of the patented composition would stimulate the recording art to overcome such obstacles as are met with in recording on the patented composition, so as to realize an improved result over that which could be obtained on the present blank composition.

Q. 362. It seems to me that the fact that the possession of the patented composition, assuming the non-use of the molding record art, as a stimulus to improve the method of recording by cutting, is not of present usefulness. I will, however, restate the question: Is it not the fact that if we are not dealing with the molded record art, but have your patented composition and wish to employ it in making cylinder records in any of the ways ordinarily employed before the advent of the molded record art, so far as any present developments have occurred the patented composition has no utility over the ordinary old blank composition, unless it be that of superior wearing qualities; and it is problematical whether the advantage of superior wearing quality might or might not be more than counteracted by the inferior cutting quality?

A. In the art of making records by cutting, it is first necessary to get the composition having the properties desired and then adapt the recording mechanism to suit the composition. All such recording mechanisms now in use are adapted to suit the blank composition, and if the blank composition was discarded and the patented composition was substituted in its place, there is no question in my mind but what the difficulties due to the greater toughness of the patented composition, would be overcome and that the patented composition would prove superior in several ways over the present blank composition; but of course, it is not so utilized, because the molded record art makes it unnecessary. If we did not have the molded record art, however, it is extremely probable that the patented composition, or some other composition having similar properties would come into use.

Answer objected to as not responsive. The question was framed in order to exclude any conjecture as to what improvements might be made in the recording mechanism.

Q. 363. Can you answer the preceding question considering only the developments that have already taken place, without referring to what improvements might be made in recording mechanism?

A. By improvements in recording mechanism, I did not mean to refer to new inventions in that way, but simply the adjustment

of the angle of the needles and the thickness of the diaphragm to suit a harder and tougher material. I do know that the patented composition when properly filtered, which filtration by the way, is not a necessity in the molded record art, has certain decided advantages over the blank composition, due to its greater wearing properties, even when used in making masters at the present day for the molded records, because in so making the original or master records, it is necessary to reproduce the same several times in order to note the defects in the execution of the music, or in the making of the record, and in so doing with the present blank composition, the records are frequently injured; whereas, with the patented composition, they are not so susceptible of injury, owing to the greater wearing properties.

10 *Q. 364.* Since the last session, have you given any further study or attention to the subject of the composition of carnauba wax?

A. I have not; I have been away to Europe in the meantime and on other business and have no opportunity of investigating any further into the composition of carnauba wax, other than
20 to read over hastily the testimony which was given just previous to the last adjournment.

Q. 365. It is the fact, is it not, that carnauba contains compound ethers or "esters," and that these are "wax-like"?

A. It is well established by all authorities that carnauba wax does contain a hard wax-like ether of erucic acid and myricyl alcohol, but that it does not contain an ether of stearic or palmitic acid, such as is produced in the patented composition.

Q. 366. Is the ether which you say is contained in carnauba wax a "wax-like compound ether"?

30 *A.* Wax-like is a very general and broad term and I do not think that compound ether already existing in carnauba wax could be strictly defined as wax-like, because it is very hard and has excessive shrinkage properties, whereas most wax-like materials are similar to beef wax and paraffine, etc., which do not exhibit these properties. However, it is a wax, or rather belongs to the class of organic substances, known as waxes. Myricyl cerate which is found in carnauba wax is a compound ether.

Q. 367. If we take your regular blank composition and about ten to fifteen per cent. of carnauba wax, and simply melt the two
40 and mix them thoroughly together, in your opinion, is the resulting composition correctly described by the language of any of the claims here sued on; and if so, which claims.

A. Although I do not pose as a patent expert, I think that the composition mentioned in claims 7, 8, 9, 10, 11, 12, 13, 14,

15, 16, 17, 20, 21, 23 and 24 are not such as you refer to in your question.

Q. 368. Why, and you may confine yourself to claim 7 in your answer?

A. Because, in this claim, which reads—

"A composition for phonograph recording purposes, comprising a metallic soap, and a wax-like compound ether, substantially as set forth."

it is meant that the wax-like compound ether is produced in the making of the composition as set forth in the specification, and further there is no non-hydrocarbonic ingredient which is present in the blank composition.

Q. 369. You have just stated that you do not claim to be a patent expert, and my questions have not asked you to interpret the scope and meaning of the claim. Please refer to the language of claim 8 and state whether or not, in your opinion, that language correctly describes the material made by thoroughly mixing the regular blank composition and carnauba wax when molten, but without employing the high temperature or the protracted heating?
20

Counsel for complainant protests against questions of this character, which are plainly directed to matters of expert testimony as to the interpretation of the claims.

The witness is a chemical expert and not a patent expert. Patent experts have already testified for both sides and could have been examined by defendant's counsel. If Counsel merely wishes to know whether a certain composition is included by the "language" of the claims without reference to the specification, to explain what the language means, the question is plainly
30 frivolous and immaterial and is objected to for that reason. The question and similar questions of this character are further objected to as having no basis in the direct examination and defendant's counsel is warned accordingly.

A. The wording of the claim indicates a mixture of the metallic soap and compound ether substantially as set forth in the specification, and since with reference to this particular claim, the specification mentions combining these materials in a particular way, unless that particular way were followed, the case mentioned in
40 your question would not come under this claim.

Answer objected to as seeking to interpret the scope of the claim and as not responsive.

“Q. 370. If I take, say ten or fifteen parts of carnauba wax which contains a compound ether that is a wax and which in some of your answers you say is “wax-like,” and add it to say—one hundred parts of regular blank composition, by merely fusing the two and mixing them thoroughly together, is the composition so obtained “a mixture of a metallic soap and a wax-like compound ether?”

A. Yes, without reference to claim 7, which in your previous question was referred to, I should call such a mixture “a mixture of a metallic soap and a wax-like compound ether.”

“Q. 371. Would you call the mixture obtained, as stated in “Q. 370 “a mixture of a metallic soap, a wax-like compound ether, and a non-hygroscopic ingredient?”

A. Provided that the temperature were not high enough to cause combination between the mixture, the wording of the question—that is—a mixture of a metallic soap, a wax-like compound ether, and a non-hygroscopic ingredient, would correctly describe the composition. In these questions, no reference being made to the temperature or method of combining these materials, which in the claims of the patent are clearly referred to, in the words “substantially as set forth.”

The last sentence is objected to as incompetent and volunteered.

“Q. 372. Is the mixture obtained as stated in “Q. 370 “a mixture of a metallic soap, a wax-like compound ether and ceresin?”

A. Assuming that the wax-like compound ether of your question to mean any wax-like compound ethers, and not the special wax-like compound ether of the patent, then I would answer your question in the affirmative.

“Q. 373. What is the thing which you regard as “the special wax-like compound ether of the patent?”

A. The substance which gives the composition its peculiar properties of toughness and shrinkage; and the other properties mentioned, whether it may be the added compound ether, or the product of interaction of the added compound ether with the wax-like composition, or an entirely new compound ether formed in the composition from the free myricyl alcohol of carnauba wax, as specified in the patent.

“Q. 374. If you add carnauba wax to the regular blank composition, and do not get the peculiar properties of toughness and shrinkage, and the other properties, which you have mentioned in connection with the Aylsworth composition, during your testimony herein, I understand your position to be that

although such composition would be correctly defined by the language used in “Q.’s 370-372, yet it would not be the composition called for by claims 7, 8 and 9 of your patent?”

Question objected to as calling for a conclusion of law and Counsel for complainant renounces his protest against the continued examination of this witness as to matters which are purely within the province of a technical patent expert.

A. This seems to be a patent expert question, in fact all of these questions appear to be patent expert questions, but defendant’s counsel objects to my answering in the way that they should be answered by a patent expert; consequently I cannot answer these questions intelligently without referring to the exact wording of the claims and from my understanding of the claims.

“Q. 375. If you add carnauba wax to the regular blank composition (assuming them in the proportions of about 10 or 15 parts carnauba to 100 parts of the blank composition) and merely fuse them and mix them, is it your position that the composition so obtained would not have the peculiar properties now 20 and formerly referred to by you as distinguishing your patented composition?”

A. Since in your question, you mention no temperature, but simply say fused or mix the fused ingredients, I would infer that you mean not materially heating the material beyond their melting point, and in which case, the patent specification clearly states what my belief under such conditions are, where it states:

“Unless the carnauba wax is melted beyond its melting point resulting in the reaction taking place, the composition, although harder, is very brittle and 30 shrinks excessively and is therefore not so desirable as when the high heating is effected.”

“Q. 376. Assume please, that we take the ordinary blank composition and add to it, another ingredient, (whether carnauba or “a hard wax”, or “a wax-like compound ether”), or even still some other ingredient, from which during treatment with the blank composition a wax-like compound ether is produced; and suppose the treatment consists of the application of the temperatures indicated by your patent, continued during the times indicated by your patent; but suppose the composition resulting 40 from this treatment does not have the peculiar properties of hardness and shrinkage and the other properties heretofore referred to by you. Would such composition be your patented composition?”

A. That is more in the line of a patent expert question than a chemical question, and as such I am not particularly qualified, yet it is my opinion that if the results were not obtained and the patent specifications were strictly followed that it would be through the mistakes or accidents in attempting to make the composition that such an unfavorable result would occur, provided we were using carnauba. Speaking as a chemical expert, I should say that if some other material besides carnauba were used in the same way and if we did not get the same result, it would not be in accordance with the practice of the patent.

10 Q. 377. I had understood your testimony in previous sessions to be to the general effect that if you added carnauba to the blank composition, but did not raise the temperature materially beyond the fusing point of the ingredients, the resulting composition would not have the desirable properties sought for by your patent. In short, such procedure would not be an infringement, but your answer to Q. 375 seems to be somewhat different. In your opinion, would or would not the composition so obtained have the new and desirable properties of the Aylsworth patented 20 composition?

Question objected to as calling for a conclusion of law and counsel again protests against this line of cross-examination, because it should properly have been addressed to the patent experts who have already testified in this case, if permissible at all. And the question is further objected to as having no basis in the direct examination. The question is also objected to as being irrelevant and immaterial, since it relates to no issue involved in this case, the proofs showing that with defendant's practice the composition was heating to a high temperature. 30

By Mr. Massie—Complainant's counsel is requested to read the question and state wherein it calls for a conclusion of law.

A. It would have some but not all of the desired properties of the patented composition, as preferably made.

Q. 378. As a chemist, are you prepared to say that every composition containing the regular blank composition and a wax-like compound ether, where the temperatures and times called for by the patent have been employed, would have the peculiar properties which you have attributed to the Aylsworth patented composition? 40

A. I can only answer definitely for such materials as are mentioned in the patent. There might be added wax-like compound

ethers which would convey undesirable properties, such as the compound ethers occurring in certain fish oils and various substances which might be used in the manner mentioned in your question and without first trying them I would not be able to answer the question in such a broad general way.

Q. 379. Are you prepared to say as a chemist, that every composition containing the regular blank composition and a hard wax where the compounding of the same has been accompanied by the temperatures and times, called for by the patent in suit, would have the peculiar properties which you have attributed to the Aylsworth patented composition?

A. No, I am not prepared to say that any such mixture would have the properties mentioned in the patent in suit, and as a chemist I could not advance any conjecture as to what the properties might be without knowing in advance the particular substances it is desired or intended to mix with the blank composition.

Q. 380. Please consider the case where the ingredients (the regular blank composition and carnauba in substantially the proportions indicated by your patent) have been merely fused and thoroughly mixed, as distinguished from heating to a temperature materially higher and maintaining this temperature for a number of hours, or until all fuming had ceased. I understand you to say that in the first case the resulting composition will have some, but not all the peculiar advantages of the patented Aylsworth composition. Please state which of the advantages which you regard as peculiar to the Aylsworth patented composition would not be present?

A. It would have nearly all of the properties of the composition which was heated to the high temperature for a prolonged period, but it would in addition be more brittle and not such a desirable composition for the purpose of making molded records. And further, such a composition would have an excessive shrinkage, which is objectionable. 30

Q. 381. So that for all practical purposes, the only differences between the Aylsworth composition made in the preferred manner and the composition made with carnauba not beyond its fusing point, are increased brittleness and greater shrinkage of the latter—that is, so far as the molded record art is concerned?

A. That is all that I now think of, and they are quite sufficient to render the preferred method and composition operative in preference to the simply mixed material at their melting points.

Q. 382. Is the material simply mixed at the melting point in your opinion suitable for use in making molded records?

A. It might be used with a part of the advantages mentioned in the patent specification, but not so effectively or preferably as the preferred method and product mentioned in the patent. Signature and certificate waived.
Adjourned subject to agreement of counsel.

10 United States Circuit Court, District of New Jersey.

NEW JERSEY PATENT COMPANY
vs.
COLUMBIA PHONOGRAPH COMPANY
GENERAL.

In Equity No. 12.
On Letters Patent
No. 782,375.

EDISON LABORATORY, Orange, N. J.,
FRIDAY, February 22d, 1907.

Met pursuant to adjournment.

20 Present Counsel as before.

THOMAS A. EDISON, a witness called on behalf of the Complainant having been first duly sworn deposes and says as follows:

DIRECT EXAMINATION, by Mr. DYER:

Q. 1. Please give your name, age, residence and occupation?

A. Thomas A. Edison, age 60, residence West Orange, N. J., occupation inventor.

Q. 2. What if any experience did you have in the early days of your experiments with the phonograph in connection with the duplication of records by molding?

30 *A.* I had a very extended experience in molding records from a master by pouring and dipping.

Q. 3. Pouring is the same as casting, is it not? *A.* Yes, sir.

Q. 4. Who was the assistant who did most of the work in these early experiments?

A. I had a great many assistants; a man named Schultz-Berge and a man named Payne and others who I do not recall now.

Q. 5. At that time how perfect were the molds from which you expected to make duplicates?

40 *A.* The molds were perfect.

Q. 6. As perfect as now?

A. I think they were as perfect as they are now.

Q. 7. When was it that these experiments were made?

A. About 1889 or 1890.

Q. 8. At that time the ordinary blank composition that is now used was well known, was it not? *A.* Yes.

Q. 9. And that blank composition was as perfect then as it is now? *A.* About the same, I think just the same.

Q. 10. The blank composition was the same then as it is now? *A.* Yes, sir.

Q. 11. Did you ever attempt in these early experiments to make duplicates from the blank composition by casting?

A. Yes, sir.

Q. 12. Did you succeed in those experiments?

A. Yes, we made some.

Q. 13. What difficulties were encountered in that work?

A. The trouble was the unequal contraction, with the poor surface and with some parts of the records sticking to the mold, and bubbles, so that the number of the records which were good compared with those which were not, was very small.

Q. 14. These troubles then were due principally to the material used and not to the process?

A. Yes, due to the material.

Q. 15. Did you attempt to cast records of any other material than the blank compositions?

A. Yes, we tried all kinds of experiments with the blank composition in which other ingredients were incorporated, and also compositions which did not have any of the compositions of the ordinary blank.

Q. 16. That is to say, as I understand you, you made experiments with entirely new compositions as well as experiments with the blank composition, modified by the addition of other ingredients? *A.* Yes, sir.

Q. 17. Do you remember what materials you attempted to use in connection with the blank composition?

A. Yes, we added all kinds of waxes and gums and things like that, and non-soluble materials which would go into the form of an emulsion.

Q. 18. In those attempts to modify the blank composition so as to fit it more perfectly for the making of molded records, did you ever use carnauba wax in connection therewith?

A. I do not remember positively whether I used carnauba or not, but if I did it was not a success; if it had been a success, it would have made an impression on my mind.

Q. 19. Do you recall how long these experiments continued, in which you attempted to make molded records by casting?

A. A very long while, several years. We were working on two processes to see if we could not make a cheaper and better duplicated record than what we were making by the mechanical process, one of the processes being pressing the material while in a plastic state against the record within the cylinder, and the other was to melt the material and cast it in the mold; we went from one to the other; as we would get bad results from the casting process we would then take up and try to cheapen down the present process; and then I would get other ideas and try the molding or the casting process again, and we changed from one to the other; tried to get some kind of a process which was more expeditious and cheaper and better than the mechanical duplicating process then in use.

Q. 20. In the casting process what was the great difficulty that you always met with?

A. One of the greatest difficulties as I remember it was the formation of bubbles and the unequal shrinkage, bad surface, sticking to the mold, and of course hardness was what we wanted, but we would be satisfied with no greater hardness than that of the blank composition if we could get good results in molding.

Q. 21. These troubles then with the casting process all narrowed down to the material? A. Yes.

Q. 22. Did you give up the casting process?

A. No, I did not give it up, as I always experimented with it; but finally I had so much to do that I turned it over to Mr. Aylsworth to see whether he could not find a good economical compound.

Q. 23. The pressing process to which you have referred is the one that is described in your patent, No. 713,209 of November 30, 11, 1902, is it not? A. Yes.

Q. 24. And the casting process that you refer to is described in your patents No. 667,202 and No. 667,662, of February 5, 1901, is it not?

A. That describes one of several that I used.

Q. 25. After you turned this casting problem over to Mr. Aylsworth did he succeed in solving the difficulties? A. Yes, sir.

Q. 26. Did he succeed in making a material that overcame the difficulties which you had encountered? A. Yes.

Q. 27. Did you know at the time what this material was that he made?

A. No, I didn't pay any attention to it; it went right into commercial use and I never knew exactly what it was.

Q. 28. How extensive was the commercial success of the mold-

ing or casting process after Mr. Aylsworth had made his composition?

A. It was a very great success commercially speaking and also it was better.

Q. 29. With respect to the molded record art, would you regard the discovery of Mr. Aylsworth of this composition as an important contribution?

A. Yes, very important; it was the one thing that was wanted to make the art a success.

Q. 30. If the only composition known in the art was the blank composition, would the art in your opinion have developed to its present proportion?

A. No, I don't think it would, and I don't think anybody could make the blank composition a success.

Q. 31. When did you first have knowledge of Mr. Aylsworth's patent in suit? A. The day before yesterday.

Q. 32. You then saw for the first time what Mr. Aylsworth's patent was?

A. That is the first time I ever read the patent or knew what the exact composition was.

Q. 33. Were you or not surprised to find that the commercial results were secured by the use of carnauba wax?

A. Yes I was surprised, but I was particularly surprised at the way he got the results by the use of carnauba.

Q. 34. That is, as I understand you, by the prolonged heating at a high temperature?

A. Yes, by the prolonged heating at a high temperature which evidently produces some reactions which are beneficial and which would not be beneficial if there was not this long heating. In other words, this little trick appears to have solved the question.

Q. 35. I suppose you have been familiar with carnauba wax for a long time?

A. Yes, I have known about it for years.

Q. 36. Did you ever use carnauba wax in your regular output?

A. Yes, I think we did years ago.

Q. 37. Do you recall whether the very earliest records made were formed of a composition of carnauba wax and cersin?

A. Yes, I think we made some records with that, but those were original records and not duplicates.

Q. 38. What are the principal peculiarities of carnauba wax as a molding material as you observed it?

A. Carnauba wax as it comes in commerce is a mixture of resins and waxes and other compounds and has an enormous

shrinkage capacity and, after pouring it, on solidifying, it cracks in all directions and shrinks enormously and is very hard.

Q. 39. Would you be able to tell from your general chemical knowledge and your familiarity with the manufacture of phonograph compositions, without independent experiments, that carnauba wax would be miscible with the blank composition?

A. No, you would have to try the experiments. There are lots of material, wax-like and resin-like, which are not miscible with one another, they segregate out; they do not make perfect mix-
10 tures.

Q. 40. And in this art, as I understand it, it is necessary to have a homogeneous composition? A. Yes, sir.

Q. 41. Can you mention off-hand any materials that you have found from your experiments do not mix or become miscible with the blank composition?

A. Yes, shellac, for instance, does not mix with wax; asphalt
also.

Q. 42. In view of your familiarity with the peculiarities of carnauba and particularly its excessive shrinkage and the fact that it waxes badly, could you foretell that even if it was miscible with the blank composition, its addition to the blank composition would give the resulting combination of desirable molding prop-
20 erties?

A. You could not tell anything about it; no person can tell anything about mixtures of waxes, because the waxes themselves are mixtures, and the chemistry of waxes is not well known, and of all the waxes I know of I think the chemistry of carnauba is the least known and has been very little investigated. It is absurd to say that you could pre-determine the characteristics of a mixture
30 of many different kinds of fatty acids with resins; it can only be obtained by experiments, and then an infinite number of results will be had, according to how they are made, with regard to temperature and the length of time they are subjected to heat.

Q. 43. Then you would not regard it as an obvious expedient to use carnauba wax in connection with the blank composition for the purpose of increasing its hardness and giving it desirable
molding properties?

A. If one knew it was miscible he might think it would harden it, but as far as putting it in with another compound and the result being capable of producing perfect effects by casting pro-
40 cesses, he could not possibly know such a thing except by actual experiments.

Q. 44. In view of the fact that in the manufacture of the blank

composition it has been the practice for years to maintain the heat in the neighborhood of 450 degrees until foaming ceases, would you regard it as an obvious expedient, when carnauba is added to the blank composition, to maintain the heat for several hours, at that temperature?

A. I don't see that it would be possible for anybody to know that they had to do this to produce good results. This result is purely a question of many, many experiments, or accident.

Q. 45. I direct your attention to your patent No. 404,582 of October 18, 1892. Does this patent describe any materials for use in casting?
20

A. Yes, it does; it speaks of wax, or wax-like material, and resin, and plaster of Paris.

Q. 46. Would any of these materials be successful for the pressing of the art at the present time?

A. No, I don't think so. There is no doubt that with some of them records could be made, but the percentage of good records would be too small.

Q. 47. I direct your attention to your patent No. 406,576, of July 9, 1889, and call your attention to the reference therein on the first page to the use of carnauba wax. What was this wax employed for?
30

A. The carnauba wax was employed to increase the shrinkage, because asphalt, when we pour it in a mold, does not contract enough to permit it being pulled out, and I added carnauba wax to the asphalt for the purpose of causing the whole to shrink sufficiently to permit it being pulled out of the mold.

Q. 48. Can you state whether the blank composition possesses sufficient shrinkage for the purpose of this art?

A. Yes, it does. The amount of shrinkage need not be very great, about one thousandth or two thousandth of an inch is quite sufficient.

Q. 49. So that with the present art there is no necessity of increasing the shrinkage of the blank composition if that could be used? A. No.

Q. 50. I call your attention to your patent No. 713,209 of November 11, 1902, before referred to, which describes the pressing process and asks you if any of the compositions or materials mentioned in this patent would be suitable for the molding art at the present state? A. No; I do not think so.
40

Q. 51. As I understand this patent, these are all materials in which the attempt was made to produce a composition that would be harder than the blank composition? A. Yes, sir.

Q. 52. And you attempted to do that by the addition of fine precipitates? A. Yes.

Q. 53. Did the idea of adding carmanba as a possible hardening material, instead of the fine precipitates, occur to you?

A. No, sir, I do not think it did; if it had I would undoubtedly have mentioned it in this patent.

Further taking of testimony was therefore adjourned until Saturday, the 23d day of February, 1907, at 10 o'clock A. M. at the Edison Laboratory, West Orange, N. J.

10

EDISON LABORATORY, Orange, N. J.,
SATURDAY, February 23, 1907.

Met pursuant to adjournment.

Counsel present as before.

Defendant's counsel enters timely objection to question 44 as without basis in the previous testimony of the witness.

20 CROSS-EXAMINATION, by Mr. MASSIE:

Q. 54. In your answer to question 5 you say the molds which you had in the early days were perfect? A. Yes, sir.

Q. 55. Why was it supposed to be necessary to split the molds as stated in one of your early patents?

Objected to as immaterial and irrelevant.

A. To get the record out; we thought it necessary.

Q. 56. In answer to questions 11 and 12 you say that in those early experiments in attempting to make duplicates from the blank composition by casting, you made some; at what temperature were those castings made? A. I do not remember.

30 Q. 57. In answer to question 19 you speak of trying to cheapen down the pressing process; did you succeed in getting a pressing process that gave you good results, but that was not sufficiently cheap?

A. We sometimes got some very fine records but the proportion of goods records to the bad ones was so small that it was out of the question to make them commercially.

Q. 58. My question was as to the meaning of the word "cheapen." A. Cost of product, I mean.

40 Q. 59. Because such a large proportion were broken or were unsatisfactory? A. Were bad.

Q. 60. In answer to question 20 you speak of the casting process and your experience in that specific process; in your experiments was the mold heated before hand or how was that?

A. I do not remember exactly.

Q. 61. Was the molten material poured into the top of the mold or was the mold dipped into the material, or how was that?

A. Generally dipped, as the pouring mold streaks.

Q. 62. Do you remember whether or not the temperature was maintained at the dipping or how was that?

A. We simply melted the material and as soon as it was molten we would dip the mold into the material.

Q. 63. In answer to question 22 you say that you turned the subject over to Mr. Aylsworth to see whether he could not find a good economical compound; does that mean that you already had a good compound that was not economical?

A. I have already stated that we had a compound which sometimes would give a good record, but so many of them were had that it was not economical and I wanted Mr. Aylsworth to find a compound that would give such a percentage of good ones that it would make the product a commercial success; that our losses would not be so great as to ent up all the gain.

Q. 64. Is the process described in your patent No. 713,209 (question 23) a good process for pressing records?

A. Yes, a very good process.

Q. 65. But how about it for the same composition for casting a record?

A. You can use composition in pressing that you could not use at all in casting; for instance you could use material that would not melt but would soften to permit a pressing.

Q. 66. Are we to understand that the composition and process set out in your patents No. 667,022 and No. 667,664 (Q. 24) will give some good cast records, but the percentage will be small?

A. Yes, they will give some good records; it is entirely a question of the material, its characteristics.

Q. 67. But I understand that the percentage of poor records would be so great that those two patents are not commercially satisfactory, is that correct?

A. Well that depends. The process itself is all right provided the compounds are all right, but the compounds therein spoken of did not give enough good records to compete commercially with the process we already had, working mechanically. We were competing against a commercial process already in vogue and in use and unless we could produce something better and get more for it or produce it cheaper, we could not compete.

Q. 68. The commercial process already in use means the mechanical duplicating that was formerly employed? A. Yes sir.

Q. 69. In your answer to question 38 you are speaking of carnauba wax without any other substance being added to it when you say that it cracked in all directions, does not solidify?

A. Yes sir, I am.

Q. 70. Do you regard carnauba wax as a "wax"?

A. It is called a wax, but it is a mixture of resins and waxes.

Q. 71. Do you regard shellac as a wax? A. No.

Q. 72. Do you regard asphalt as a wax?

A. No, it is not called a wax, although some of the members of the family are quite waxy.

Q. 73. As a rule are tapers miscible with the blank composition; I mean the metallic soap mixture used for making blank cylinders for phonographs.

A. I could not answer that question, whether all waxes are miscible; I think most of them are, but if a new wax should come in the market, it would be hard to say whether it is miscible or not until you had tried it, because it might be mimmed as a wax and not be a wax at all; paraffine is not a wax but it is wax-like.

Q. 74. How long has carnauba wax been known by persons in the talking machine art?

A. Oh, that must have been known from the earliest time in the talking machine art.

Q. 75. If one in the talking machine art knew that carnauba wax was miscible with the ordinary blank composition, that is the composition for making the blank cylinder, would he assume that he could use it to harden the blank cylinder composition?

A. He might and might not according to his experience. Hardening is not the only thing to be solved in the use of carnauba wax.

Q. 76. Confining ourselves for the present to hardening only, if this mechanic skilled in the talking machine art knew that carnauba wax was miscible with the blank cylinder composition, would he not know that carnauba wax would harden that composition?

A. I don't know. Carnauba melts at a high temperature and some waxes at the temperature of the melting of carnauba would decompose and the result would be softer than when he started.

The subject is too complicated to be able to theoretically determine beforehand what is going to be the result, there might be intersections that are not known; it depends on the composition.

Q. 77. Does the blank composition used by the Edison Phonograph Works decompose at the melting point of carnauba?

A. I suppose some of it does decompose; I think when carnauba is put into that mixture chemical reactions take place. I do not know what they are, but I am pretty sure they do, as evidenced by the formation of gas and a lot of other products that are odoriferous.

Q. 78. My question did not assume that carnauba was added; I merely asked whether the blank composition itself would decompose at the temperature at which carnauba would melt?

A. Yes, it distills and decomposes; you can keep it for a long time at a certain temperature, or the temperature we use it at and it will gradually blacken and decompose until it gets jet black.

Q. 79. Do you know what reactions are taking place; I am speaking only generally; do you know what happens to the blank composition if it is kept at the temperature at which carnauba melts?

A. Oh, no, no one knows such things. The chemistry of waxes is very little known; they are most complicated mixtures of high atomic weight.

Q. 80. Is carnauba miscible with asphalt?

A. Yes, it is not perfectly miscible, but you can get it in combination.

Q. 81. Can you name any wax or any waxes with which carnauba is not miscible?

A. I don't remember any just now, but I suppose there are certain waxes which it is not miscible with, that decompose at a low temperature.

Q. 82. In your direct testimony you have spoken of attempts to make cast records by processes and the use of compositions specified in your testimony and you say that the results were not commercially satisfactory; do you remember anything about the duration of the time during which the temperature was kept up, in attempting to do this work?

A. We generally melted the base compound and then added the other ingredients and then when they were liquid enough we used them.

Q. 83. You used them as soon as they were liquid enough without further maintaining the heat? A. Yes, sir.

Q. 84. And in the same manner with regard to all your attempts to make satisfactory cast records, I understand that the 80 mold was lowered into the molten material and raised as soon as enough of the composition had adhered to it?

A. Not in all cases.

Q. 85. What other methods were employed?

A. We poured them in, dipped them and raised the liquids up into the molds.

Q. 86. When was it that you turned over to Mr. Aylsworth the problem of finding a good economical compound for making cast sound records? (Q. 22.)

A. I cannot tell until I look up my records.

Counsel for complainant states that this information will be furnished to defendant's counsel by Mr. Aylsworth, who is at present being examined.

10

RE-DIRECT EXAMINATION, by Mr. DYER:

Q. 87. In view of the objection by counsel for defendant I will ask you to read question 42 of your direct testimony and state whether any statement is made therein that is in any way suggestive to you? A. (Mr. Edison reads question 42.)

Q. 88. Have I misled you in any way or said anything that is not correct? A. No, I knew all that before.

Signature and certificate waived.

20 Adjourned until Monday, February 25th, 1907, at the office of Frank L. Dyer, Orange, N. J.

ORANGE, N. J., Thursday, February 28th, 1907.

Met pursuant to agreement.

Present—Counsel as before.

Complainant's counsel offers in evidence copies of the following patents as exhibits for the Complainant:

30 Patent to Edison, No. 200,251, dated February 19, 1878, and the same is marked "Complainant's exhibit, Edison Patent, No. 200,251."

Patent to Reynolds, No. 287,156, dated October 23, 1883, and the same is marked "Complainant's Exhibit, Reynolds Patent, No. 287,156."

Patent to Tainter, No. 341,287, dated May 4, 1886, and the same is marked "Complainant's Exhibit, Tainter Patent, No. 341,287."

40 Patent to Berliner, No. 372,786, dated November 8, 1887, and the same is marked "Complainant's Exhibit, Berliner Patent, No. 372,786."

Patent to Harrington, No. 392,953, dated November 13, 1888, and the same is marked "Complainant's Exhibit Harrington Patent, No. 392,953."

**Legal Department Records
Phonograph - Case Files**

***New York Phonograph Company v.
National Phonograph Company et al.***

This folder contains material pertaining to the suit brought by the New York Phonograph Co. against the National Phonograph Co., Edison, the Edison Phonograph Co., and the Edison Phonograph Works in the U.S. Circuit Court for the Southern District of New York. The case was initiated in January 1901 and involved territorial sales rights. The selected items consist of correspondence from the period 1900-1905 regarding the context and progress of the litigation. Related material can be found in the case files for *Thomas A. Edison et al. v. New York Phonograph Company et al.* and *United States of America v. James L. Andem.*

Portions of the court record for the case on appeal appear in *Thomas A. Edison Papers: A Selective Microfilm Edition, Part III, 117:385-973.*

CCFY

New York, Oct. 27th, 1900.

Mr. Leon F. Douglass,
c/o Eldridge R. Johnson,
Camden, N.J.

My Dear Mr. Douglass:-

Your letter of the 26th just as hand. I will try to see if I can put through the deal on the basis of \$300.00. The New York Phonograph Co., have held a Board meeting and considered the subject and advised me that they could not accept this proposition. I will try again and let you know. I am very much inclined to think that Mr. Easton is trying to buy this contract in fact I know that they have had a number of interviews on the subject and their lawyers are now in consultation in reference thereto. If this is the case I doubt very much if I can secure the license for \$300.00.

Later I called to see Colonel Evans this morning and presented your letter to him. As you probably know, Mr. Andem of the Ohio Phonograph Co., is now located in New York and is connected very closely with the New York Phonograph Co., in regard to this new arrangement of bringing action against Edison and the Sub-Phonograph Co's. Mr. Andem is an Uncle of Leeds of Leeds and Catlin Co., and Mr. Leeds has become aware of the existence of that contract with Bettini. Leeds wants to purchase a license under the contract just the same as you do and Andem is trying to work the matter in his way. The New York Company has already considered a proposition from Leeds. I think that if you want to pay \$450.00 for a contract with them to license you, they reserving the right to license Leeds or any one else in New York City, that I can put the deal through. They seem to think that Leeds is willing to pay a price for a similar license consequently they have grown a little stiff. I hardly think I can put through the original deal giving you the sole license under the contract for \$600.00, but I do think if you will take a license under the contract and some arrangements with them, that will be legal and hold water for yourself that I can put the deal through on the basis of \$450.00. You see I have to pay the Colonel at least \$100.00 for putting this deal through, he wants \$150.00, this would make the amount \$450.00. I think the New York Co., will accept \$300.00 on this basis. I am very much afraid if you do not accept this proposition and calculate on paying \$450.00 you will lose the opportunity entirely as I know they are getting very close and thick with Easton. Mr. Easton was at their office this morning for some time and I know that they are now taking up the question of this contract with him. If you decide to pay \$450.00 for the contract and license under let me know at once by telegraph Monday morning as I am very sure in stating that I will lose the chance of making a deal unless you accept quickly.

You will probably have to operate under the contract as the New York Co., as I question very much of the New York Co., under the law to give a license but they could arrange with you to make records for them under the contract and you in turn buying the records back at the same price you willed them or some such scheme as that. I hope you will let me hear from you at once if you wish me to do anything further, otherwise say yes or no positively and I will not give the matter any more time.

Yours very truly,
(signed) E.H. Hawthorne.

L.H.P.
E.A.H.

LOUIS HICKS,
COUNSELLOR AT LAW AND PROCTOR IN ADMIRALTY,
CORPORATION, PATENT AND GENERAL LAW,
25 FINE STREET.

3690
TELEPHONE NO. 289-2098.

NEW YORK, Nov. 3, 1900.

Howard W. Hayes, Esq.,
26 Washington Pl.,
Newark, N.J.

Dear Sir:

In view of your request made to me and Mr. Andem this morning that we come down to figures and in view of your statement that the Edison interests would prefer to make a payment in discharge of the claims of the various sub-companies than to incur the expense and uncertainty of litigation, Mr. Andem has considered the question of the amounts which should be paid in discharge of the claims of the various sub-companies, and I herewith submit the sums fixed by him. The necessities of the situation are such as I explained to you this morning that an agreement with the Edison interests must be reached on or before Tuesday next.

Mr. Andem will agree with the Edison interests upon the following terms: Mr. Andem is in position to execute contracts on behalf of the New York and New England Companies. The sums to be paid on account of the claims of these two companies are given below and are to be paid upon the signing of the agreements. With all the other companies named below Mr. Andem has communicated and has either the written agreement by letter or the assurance of authority to act.

In case an agreement with the Edison interests can be reached on or before Tuesday next, the settlement would include a Release and discharge of all claims for damages and profits on behalf of the sub-companies above named and an agreement by which the sub-companies and the Edison interests should exercise concurrent and exclusive rights in the territories of the respective sub-companies. The right of the Edison

LOUIS HICKS,
COUNSELLOR AT LAW AND FRACTOR IN ADMIRALTY,
CORPORATION, PATENT AND GENERAL LAW,
25 FINE STREET.

3690
TELEPHONE NO. 1222 JOHN.

NEW YORK, Nov. 3, 1900.

H.W.H. #2.

interests to do business and to sell to dealers in the territory of the sub-companies would be granted.

Although the list given below does not include all the sub-companies throughout the United States, the list does include every company that is at all important. Mr. Andem has gone over the figures carefully and believes that settlements might be made with the companies named for the figures given and will agree to use his best endeavors to secure authority to enable him to settle at those figures. He has authority now to act for New York and New England.

Sub-companies.	Amount to be paid on Settlement.
New York	\$25,000
New England	20,000
Wisconsin	3,500
Minnesota	3,000
Ohio	5,000
Chicago Central	8,000
Kentucky	3,000
State Co. of Illinois	3,000
Missouri	5,000
Michigan	5,000
West Pennsylvania	3,500
Kansas	3,000
Iowa	3,500
Nebraska	2,500
	<hr/>
	\$92,000

Yours very truly,

Louis Hicks

EDWARD P. LEEDA, President

L. ALLAN BARKET, Vice-President

L. BRUCE CATLIN, Secretary and Treasurer



Cable Address
"ELANSING"
Adams Code.

LEEDS & CATLIN CO.

MAKING · THE · LOUDEST · AND
CLEAREST · PHONOGRAPH · REC-
ORDS · AND · DEALING · IN · EDISON
PHONOGRAPHS · AND · SUPPLIES
AT · 53 · EAST · ELEVENTH · STREET.

MANUFACTURERS
WHOLESALEERS . .
RETAILERS OF . .
RECORDS.

11/8/1900
NEW YORK, November 7th.

1900

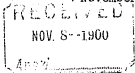
W.E. Gilmore, Esq.,

Orange, N.J.

Dear Sir:-

I received the enclosed this morning and at once called Hicks up on the telephone and did my best to get that matters delayed; he said he had talked with you on the phone this morning without knowing any thing more and that owing to the Graphophone people having conceded all the demands Mr. Andem has made it seemed impossible to give any reason for delaying signing the papers. Well I put it to them pretty strong not to close with the Columbia and I hear tonight that they have succeeded in delaying things there. So that you will have a little more time.

Yours respectfully,



[ENCLOSURE]

CABLE ADDRESS: EARLHDEL.

TELEPHONE 1294 MADISON 50.



Hotel Earlington

ABSOLUTELY FIRE-PROOF
27th ST. WEST NEAR BROADWAY,
NEW YORK.

HOTEL EARLINGTON, 27th ST. JAMES HOTEL,
June to October.
RICHFIELD SPRINGS, N. Y.

E. M. EARLE & SON.

EUGENE H. EARLE.

WILLIAM A. EARLE.

New York, Wed. Am
Nov 7 1900

My dear Edward:

Hurrah for Mr. Kinley!!

I want to keep you posted about
our negotiations with the Edison people.

We made them a written proposition
last evening & according to agreement called Judge
Hayes up last evening for a reply by telephone.

He was not so eager as at our
interview, about which I told you, but said
Edison et al spent yesterday (Tues) afternoon
considering our proposition, but reached no definite
decision: that they waited until Saturday before
deciding.

We would like to meet their ideas
& accommodate them, but it is impossible to wait
longer, as the Grapho. people are becoming more
patent lawpirates, & we may lose their
support if we delay longer.

CABLE ADDRESS: EARLHDEL.

TELEPHONE 1294 MADISON 50.



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E. M. EARLE & SON.

EUGENE H. EARLE.

WILLIAM A. EARLE.

New York, Nov 7 1900

Perhaps last evening Mr. Hicks himself
decided that he call Hayes up by telephone
this morning about 9.30 & tell him that our
proposition is withdrawn and that we passed
to-day on our original lines with the Grapho
people.

We are sorry for this but can't afford
to chance these matters by further delay.

I suppose their answer will be ascertained
by me when I reach Mr. Hicks' office this morning
I'm glad that we can't deal with them: I will hope
for a favorable reply from them which will
enable us to do so.

Sincerely yours
James C. A.

NATIONAL PHONOGRAPH CO.,
EDISON LABORATORY,
ORANGE, N. J.

ORANGE Nov. 8, 1900.

IN REPLY TO YOUR LETTER

PLEASE RETURN TO THE POSTAL

R. F. Leeds, Esq.,

53 E. 11th St.,

New York.

Dear Sir:

I am in receipt of your letter of the 7th, enclosing communication from Mr. Andem. The fact of the matter is that I am not at all familiar with the situation, and I have referred it to our attorney, Judge Hayes, with instructions that he consider same and write you fully.

Yours very truly,

President.

WGG/LVW
R

W. E. GILMORE,
PRESIDENT & GENERAL MANAGER.

ADDRESS REPLY TO THIS COMMUNICATION TO ORANGE, N. J.

J. F. RANDOLPH,
SECRETARY & TREASURER.

NATIONAL PHONOGRAPH CO.

EDISON LABORATORY, ORANGE, N. J.

OFFICE AND SALESROOM.

137 1/2 FIFTH AVENUE,

COR. OF 20th STREET.

IN REPLYING TO THIS LETTER

PLEASE MENTION THESE INITIALS.

Orange, N. J. Jan. 29, 1901.

Howard W. Hayes, Esq.,
Prudential Building,
Newark, N. J.

Dear Sir:

I enclose you herewith the subpoena that was left at the New York office yesterday afternoon at 5:30, being received by Mr. Dodge. I received it from him this afternoon about 1:30. I expect to see you in regard to this and other matters within the next few days.

I talked with Mr. Edison this afternoon about your meeting him on Thursday, but he does not feel very much alarmed and states that he hardly thinks it necessary for you to see him at this time, although of course if you think to the contrary he will be glad to see you any day and at any time you may set. Of course I do not want to bring you up here unless it is imperative, as I know you have lots to do, and as I have made arrangements to be in Newark Thursday afternoon next, I shall of course be glad to see you there, so kindly let me know the time either by letter or telephone.

Yours very truly,

W. E. Gilmore
President.

WESG/LWW

Enc-

W. E. GILMORE,
PRESIDENT & GENERAL MANAGER.

ADDRESS REPLY TO THIS COMMUNICATION TO ORANGE, N. J.

J. F. RANDOLPH,
SECRETARY & TREASURER.

NATIONAL PHONOGRAPH CO.

EDISON LABORATORY, ORANGE, N. J.

OFFICE AND SALESROOM.

135 FIFTH AVENUE,

COR. OF 20TH STREET.

IN REPLYING TO THIS LETTER

PLEASE MENTION THESE DETAILS.

Orange, N. J. Jan. 29, 1901.

Howard W. Hayes, Esq.,
Prudential Building,
Newark, N. J.

Dear Sir:

Here is the first communication we have received regarding the newspaper article on the suit of the New York Phonograph Co. against Edison and others for \$225,000 damages, with which, of course, you are familiar. It is necessary that we get up at once a circular letter setting forth our position in this matter to allay all fears, so far as our dealers generally are concerned, and I should like, of course, that ~~you~~ you get this out for general distribution at the earliest possible moment.

Yours very truly,

W. E. Gilmore
President.

WEG/IWW

Enc-

W. E. GILMORE,
PRESIDENT & GENERAL MANAGER.

J. F. RANDOLPH,
SECRETARY & TREASURER.

ADDRESS REPLY TO THIS COMMUNICATION TO ORANGE, N. J.

NATIONAL PHONOGRAPH CO.

EDISON LABORATORY, ORANGE, N. J.

OFFICE AND SALESROOM.

135 FIFTH AVENUE.

COR. OF 20th STREET.

IN REPLYING TO THIS LETTER

PLEASE MENTION THESE INITIALS.

Orange, N. J. Feb. 15, 1901.

Howard W. Hayes, Esq.,
Prudential Building,
Newark, N. J.

Dear Sir:

The attached circular of the New York Phonograph Co. was issued about the same day that we issued our notice. I stuck it in Mr. Edison's drawer and handed it to him yesterday. I have also been interested to know whether the circular was going to have any effect with our jobbers, dealers, etc., but I am very happy to say that I have heard nothing. The circular is printed on such poor paper that in handling it it was torn entirely apart by me, and I have had to have it backed up in the manner shown; they must be getting short of cash. I send the circular to you for your information and assume you will keep it with your other records.

Yours very truly,

W. E. Gilmore
President.

WRG/IWV

Enc-J

[ENCLOSURE]

M. Edison

OFFICE OF THE
New York Phonograph Company,

ROOM 933, PARK ROW BUILDING,

13 to 21 Park Row, New York City.

FEBRUARY 1, 1901.

Notice is hereby given to all persons using, buying or selling Edison Phonographs, Records and Supplies, within the State of New York, except through or by the consent of the undersigned, the exclusive licensees under the patents of Thomas A. Edison for the State of New York, that they thereby render themselves liable to us for damages, under our contracts with the North American Phonograph Company, of October 12th, 1888 (subsequently ratified and confirmed by Thomas A. Edison, the Edison Phonograph Company, the Edison Phonograph Works and others), and of February 6, 1889, giving us the exclusive right to use, rent, or sell to others to use within the State of New York, Phonographs and all the supplies necessary for the same, until March 26th, 1903, and for such further time as is prescribed by the contracts before referred to.

Proceedings in law have already been instituted by this Company in the Circuit Court of the United States for the Southern District of New York against Thomas A. Edison, the Edison Phonograph Company, the Edison Phonograph Works and the National Phonograph Company to enforce such exclusive rights by injunction, and also for damages and profits, and all parties infringing the same are hereby warned that they must immediately cease so doing or answer to this Company in damages.

The New York Phonograph Company having paid for its exclusive license before named, the sum \$225,000 cash, which license is still in full force and effect, it is determined to enforce the same strictly; and Dealers who have purchased Phonographs and Supplies from any of the above named infringers, and who desire to continue their business and avoid the trouble of legal proceedings, should at once communicate with the officers of this company and obtain from them authority to pursue their business under its sanction.

NEW YORK PHONOGRAPH COMPANY,

By H. M. FUNSTON,

President.

Attest: SCOTT TREMAIN,
Secretary.

ELISHA K. CAMP,
LOUIS HICKS,
Of Counsel.

LOUIS HICKS,
COUNSELLOR AT LAW AND PROCTOR IN ADMIRALTY,
CORPORATION, PATENT AND GENERAL LAW,
25 PINE STREET,

TELEPHONE NO. 2692 JOHN.

NEW YORK, July 25, 1962.

Thomas A. Mison, Esq.,
Llewellyn Park,
Orange, N.J.

New York Phonograph Co. vs. National
Phonograph Co.

Dear Sir:

As you are well aware, a subpoena issued by the clerk of the Circuit Court of the United States for the Southern District, of New York and under the seal of the court was duly served upon you on the 18th day of July, 1962, directing you to appear and testify in the above-entitled suit in equity and to bring with you certain documents enumerated in the subpoena. A witness fee of \$3. was paid to you and accepted by you at the time. You were directed to appear and testify on July 25, 1962, at 11 A.M. before John A. Shields, Esq., at his office in the Post-office Building, New York City. You did not attend at the time and place named, nor did you do anything, except totally to ignore the subpoena. Neither the office of your counsel, Howard W. Hayes, Esq., nor that of Messrs. Robinson, Biddle & Ward nor Mr. Boehme, at your laboratory, could give me any information whatever in regard to you or in regard to your intention to appear, or not to appear, to testify in accordance with the subpoena.

Your testimony is necessary for the complainant, and I desire to secure your testimony with the least possible friction and annoyance to you. The purpose of this letter, therefore, is to give you an opportunity to explain your failure to obey the subpoena to-day and to arrange for the taking of your testimony at the adjourned day, to wit, Aug. 1, 1962, 11 A.M. before Mr. Shields at the same place. If, however, I do not receive from you such explanation and an assurance that you will appear and testify and produce the documents called for in the subpoena in

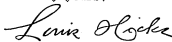
New York, July 25, 1962.

T.A.R. #2.

your possession or under your control, I shall be compelled at once to ask the court for an attachment against you. I hope, therefore, that you will communicate with me before 4 P.M. Monday, July 28, 1962.

I am,

Respectfully yours,



Of Counsel for New York Phonograph
Co.

LOUIS HICKS,
COUNSELLOR AT LAW AND PROCTOR IN ADMIRALTY,
CORPORATION, PATENT AND GENERAL LAW,
20 PINE STREET.

TELEPHONE NO. 2222 JOHN.

NEW YORK, Aug. 7, 1902.

Thomas A. Edison, Esq.,
Llewellyn Park,
Orange, N.J.

United States on the relation of New
York Phonograph Co. vs. Thomas A. Ed-
ison.

Dear Sir:

I hereby give explicit notice to you, to your counsel, Frederick
F. Guild, Esq., of Newark, N.J., and to the solicitors of
record, Messrs. Robinson, Middle & Ward, in the suit brought against you,
the National Phonograph Co. and others, in the U.S. Circuit Court, South-
ern District of New York, for which purpose I send a copy of this letter
to each of you.

On July 31, 1902, his Honor, Judge Lacombe, on the relation of the New
York Phonograph Co., signed an order directing you, Thomas A. Edison, to
appear in person before the Circuit Court of the United States for the
Southern District of New York, on Aug. 6, 1902, at 12 o'clock noon in the
Court Room at the Post-Office Building, in New York City, to show cause
why you should not be punished for contempt by reason of your neglect
and refusal to obey the subpoena served upon you on the 18th day of Ju-
ly, 1902, directing you to appear and testify and to bring with you cer-
tain documents before John A. Shields, Esq., at 11 o'clock on the 25th day
of July, 1902.

When the motion to punish you for contempt was called on the 6th
day of August, 1902, I stated to the court that I had been unable to
serve upon you, Thomas A. Edison, the order to show cause and for that
reason, in order to give you an opportunity of showing cause why you
should not be punished for contempt, I requested Judge Lacombe to ad-
journ the motion till Wednesday, Aug. 20, 1902, at 12 o'clock noon when the
motion will be called again ~~for~~ before the Circuit Court of the United
States at the Court Room in the Post-Office Building, in the City of New
York. It is very clear to me notably that you failed to obey the orig-
inal subpoena, but that every effort is now being made by you and those
acting with you to prevent the service upon you, Thomas A. Edison, of the

New York, Aug. 7, 1903.

T.A.B. #2.

order of the court. Your counsel Mr. Guild, to whom you referred me, has given me no explanation whatever as to why you failed to appear and testify in accordance with the subpoena, and, although I notified Mr. Guild, on Monday, Aug. 4, of Judge Lacombe's order and notified also the person in charge of your laboratory and notified also Mr. William E. Gilmore, your business associate at Orange, New Jersey, of the said order directing you to appear before Judge Lacombe on Aug. 6, as above stated, I could obtain no positive information as to your whereabouts. Your counsel, Mr. Guild, refused to accept service of Judge Lacombe's order for you. My representative, Herbert W. Anderson, called at your residence and at your laboratory Aug. 4, 1903, stated at each place that he desired to serve Judge Lacombe's order upon you and was informed that you had been away for a week and would not return for a week. Mr. Guild informed me that this statement was incorrect, but Mr. Guild refused to tell me when he had last seen you. Mr. Gilmore, on the same day, Aug. 4, told me when I inquired from him over the telephone that he understood that you had received a telegram from Akron, Ohio, and that you had gone there.

I desire a direct and positive statement from you as to whether you are seeking to avoid the service of Judge Lacombe's order directing you to appear before him Aug. 30, 1903.

Yours truly,

Louis H. Hoyle

Counsel for New York Phonograph Co.

CABLE ADDRESSES:
NEWARK.
WONFLEY NEW YORK.

LAW OFFICES
HOWARD W. HAYES,
PRUDENTIAL BUILDING, 745 BRAD ST., NEWARK, N. J.
180 BROADWAY, NEW YORK, N. Y.

TELEPHONE:
222 NEWARK.
1174 CORTLANDT, N. Y.

Newark, N. J. Aug. 15, 1902.

Mr. Thomas A. Edison,
Orange, N. J.

Dear Sir:-

At the request of Mr. Frederick F. Guild, I have made a thorough search in the office of Mr. Hayes for certain assignments, agreements and other documents relating to the phonograph business, and particularly such documents as are specified in a certain subpoena duces tecum, which I understand was served on you in connection with the suit of the New York Phonograph Company against the National Phonograph Company and others, and beg to state, that I have been unable to find any papers relating to this action except copies of such papers as are actually on file in the Court Clerk's office, and that I could not find any of the papers enumerated in the subpoena above referred to.

Yours truly,

Frank C. Fischer.

W. E. GILMORE,
PRESIDENT & GENERAL MANAGER.

ADDRESS REPLY TO THIS COMMUNICATION TO ORANGE, N. J.

J. F. RANDOLPH,
SECRETARY & TREASURER.

NATIONAL PHONOGRAPH CO.

Edison Laboratory, Orange, N. J.

OFFICE AND SALESROOM.

125 WEST AVENUE,

25 CHAMBERS STREET, NEW YORK.

IN REPLYING TO THIS LETTER

PLEASE MENTION THESE INITIALS.

CHICAGO OFFICE, 111 WABASH AVENUE,
FOREIGN DEPT., 25 CHAMBERS ST., N.Y.

Orange, N. J.

Aug. 18, 1902.

Thomas A. Edison, Esq.,

C/o Edison Portland Cement Co.,
Stewartsville, N. J.

Dear Mr. Edison:

I enclose you herewith your affidavit in the case of the New York Phonograph Co. against the National Phonograph Co., which has been prepared by Mr. Martin, who is connected with Judge Guild in Newark.

On page I, at the point I have queried, he has given figures as to the cost of the Cement plant which are not correct. Mr. Martin asks me to have you make such changes in this as are necessary. I told him that the plant has cost in the neighborhood of \$2,000,000, including all experimental work, but that I preferred that the changes be made by you rather than by myself.

Page 3 indicates that Mr. Fisher, who is connected with Judge Hayes, has looked through Judge Hayes' office for certain documents in the way of contracts, etc., that are supposed to be in the possession of Judge Hayes. Mr. Fisher's letter attached, dated August 15th and addressed to yourself, explains this matter. It of course goes without saying that if Judge Hayes has any of these documents in a safe deposit vault, in his safe or in some other receptacle with which he is personally familiar, nobody can obtain them until he gets back, which we hope will be on Saturday.

SHEET No. 2 DATE, 8/18/02. NATIONAL PHONOGRAPH CO. TO THOMAS A. EDISON

Will you kindly sign this document with your full name, have it properly attested before a Notary Public and then return it to Messrs. Guild & Martin, Prudential Building, Newark, N. J., in the envelope enclosed herewith.

It is very necessary that this should be mailed to them WITHOUT FAIL tomorrow, (Tuesday) so that they will receive it Wednesday morning.

Yours very truly,

W. E. Hillard

Enc-

[ENCLOSURE]

PROTECTS MINING COMPANY.

Montana Supreme Court Hearing Pre-
vents Inspection of Books.
HELENA, Mont. (Feb. 17)—The Supreme
Court yesterday upheld an order of Judge
Clancy granting Patrick Mullins the right
to investigate the books and affairs of the
Boston and Montana Mining Company to
secure evidence in his suit for three-
fourths interest in the Columbus mine,
one of the richest properties in Butte.

Feb 18 1903
ANSWERED by H. W. H.
FEB 27 1903

GLENMONT
LLEWELLYN PARK

My Dear Harpo -
I recall the other side has asked for
the production of National Clock books & minute books
Etc - & that you say they must be produced,
This is agree to me that it must be so you
say - Are we bound to give our business away
& a list of publications in open court &
our business communications to our competitors
I cannot see even if the N.Y. phone company
showed success in establishing their contention
what that they should know the stockholders
even to the amount it would seem that
it is too early in the case before they have
Established anything tangible that they
should be allowed to acquire indirectly
into our earnings - it would seem that
the time for that would be after they
had won their case & I never remember of
all the cases which I have read of N.Y.

N.Y. P. Co. to Wash. P. Co.

[ENCLOSURE]



litigation when the production of the books & stockbook query list of children that was not strictly fought & as far as I now remember the Court never compelled their production except perhaps in matters where our Contract had to be ~~proved~~ proved. That method of getting a list of the stockholders of a Corporation has never been a success. Even when Compulsion was ~~not~~ stockholder I think you should fight it, of and everything else about the National business — Their payments to me will reveal profits & thus they are not entitled to know except in the event that the case proceeds to an accounting — of as for Randolph answering anything outside of his position as an officer of the National about my private business I object most decidedly — I have spoken to

Mullins about this matter & he will see you — I have no objection to producing the minute books as long as it does not reveal our business — by question which will be asked — I also fail to see how the Connection between the National and the Compulsion is sufficiently connected to warrant or give them a sufficient right to compel a revelation of all its transactions ~~with~~ in an open Court

Yours
Edison

Fort Myers
Florida

CABLE ADDRESSES:
NEWARK.
WORTLEY
NEW YORK.

LAW OFFICES
HOWARD W. HAYES,
PRUDENTIAL BUILDING, 788 BROAD ST., NEWARK, N. J.
120 BROADWAY, NEW YORK, N. Y.

TELEPHONE:
882 NEWARK.
1174 CORTLANDT, N. Y.

Newark, N. J. February 27th 1903.

Thomas A. Edison Esq.,
Ft. Myers, Florida.

Dear Mr. Edison:-

N.Y.P. Co. vs N.P. Co. sm

I have your letter of the 18th inst, but have delayed writing until matters had shaped themselves a little bit and I could give you a full report.

Randolph must have misunderstood my message to him over the telephone, as when he told me about the subpoena I told him to get the papers together with the expectation of examining them before deciding as to whether they should be produced in evidence. The clipping you enclosed is not in point, as that is a case where an effort is made by a stockholder to get at the books of the company for improper purposes. In this case, on the face of it the books and papers are asked to be produced by subpoena as evidence in a case. The principles governing the two cases, however, do not vary materially. The rule of law is that where a paper is not relevant to an issue and tends to disclose the private affairs of any person or corporation, the court will not order its production.

In accordance with your instructions I retained John W. Griggs, who was formerly United States Attorney General, to assist me in that branch of the case. He agrees with me entirely in my theory of the case, that ~~if~~ they have not as yet produced any evidence whatever to substantiate their claim, and that these papers

CALL ADDRESS:
NEWARK,
WORTLEY NEW YORK.

LAW OFFICES
HOWARD W. HAYES,
PRUDENTIAL BUILDING, 745 BROAD ST., NEWARK, N. J.
160 BROADWAY, NEW YORK, N. Y.

TELEPHONE:
642 NEWARK,
1174 CORTLANDT, N. Y.

Thomas A. Edison, Esq. No. 2.

are irrelevant and should not be produced as they tend to disclose the private affairs of yourself and the National Phonograph Co. Hardin has been examined as a witness, but they got very little satisfaction out of him beyond the production of a few papers which are on file anyhow in the Chancery Clerk's office in this state. Hardin was very friendly and volunteered no information. He also testified the reason the bid was made in your name for the assets of the North American was because he wanted your personal responsibility on the bid and not that of a corporation about which he knew nothing. Randolph was examined to-day. I had Griggs there with me. Randolph put on the record a statement that he refused to produce any of the books or papers in question because they were not relevant to the issue and tended to expose the private affairs of yourself and the National Phonograph Company for the benefit of business rivals. He made a good witness. He remembered that the cheque of \$7500 which was produced by you and which had been given to Hardin at the time of the sale was a loan from you to the National Phonograph Company which that company repaid. He also remembered that when I handed the cheque to Hardin that I stated it was for and on behalf of the National Phonograph Company. Hicks will try to get an order from the court compelling Randolph to produce the papers in his possession which we will fight tooth and nail, and if necessary take to the Court of Appeals. I don't think that we have any reason to expect that any books or papers disclosing

CABLE ADDRESS: NEWARK.
WORTLEY
NEW YORK.

LAW OFFICES
HOWARD W. HAYES,
PRUDENTIAL BUILDING, 748 BROAD ST., NEWARK, N. J.
100 BROADWAY, NEW YORK, N. Y.

TELEPHONE: 282 NEWARK.
1174 CORTLANDT, N. Y.

Thomas A. Edison No. 3.

private business affairs will be ordered to be produced.

Mr. Gilmore met Attorney General Griggs at my office this afternoon and was very much pleased with him and glad to hear his view of the case. He has gone over the pleadings and testimony so far given and expressed his opinion that so far the complainants had not put in ~~any~~ evidence a single paper tending in any way to prove their case.

I saw Easton yesterday and told him about the condition of the Graphophone-Grand suit in Germany. He seemed somewhat surprised. He telephoned me to-day that they would be willing to give a license under the Graphophone-Grand patents in all the countries of the world where they were taken out for \$5,000 if we would withdraw opposition to them and have them sustained by decrees. I told him that the figure was out of the question and that \$3,000 was the limit. He finally said he would accept that and wanted me to make a draft of the papers. I will do so at once, but wanted to let you know immediately the situation. He also wishes to carry out the plan you suggested of each party sustaining such patents as they want to by suits against the other and giving a license after the decree. I told him that was satisfactory so long as the Graphophone-Grand deal went through at the same time. He then asked that in addition to the patents, (the numbers of which you gave Mr. Folger) we should give him a license under the built-up reproducer. I told

CABLE ADDRESS:
NEWARK,
WORTLEY NEW YORK.

LAW OFFICES
HOWARD W. HAYES,
PRUDENTIAL BUILDING, 788 BROAD ST., NEWARK, N. J.
180 BROADWAY, NEW YORK, N. Y.

TELEPHONE:
882 NEWARK
1174 CORTLANDT, N. Y.

Thomas A. Edison No. 4.

him we would not do that and would expect to push the cases for moulding and for that reproducer and not make them in any way part of the compromise. He demurred for a while at this but finally agreed to the arrangement without them.

In addition to the patents for cutting, the numbers of which you gave Mr. Felzer, it has occurred to me that possibly the Aylsworth patent for a blank might be worth sustaining. Aylsworth tells me that it was a special blank used for recording but was not very successful and is not used now, but that it or something like it might be used in the future by some record makers. Aylsworth thought it would be a good plan to sustain that although at the expense of giving a license to the graphophone people under it, so that we could use it against small record makers who might spring up in the future and want to use a blank coming under the claims of that patent. I enclose a copy of the patent so that you can look it over and see whether you want to include that in the patents upon which suits are to be brought.

I hope that you find the fishing good and only wish I could get away for the same purpose, but the trouble is that I have to work for a living.

Yours very sincerely,

Enc. 1.
Dictated
D.

Newark, September 10, 1903.

Wm. E. Gilmore, Esq.,
National Phonograph Company,
Grays Inn, 52 Grazien Road,
Holborn, England.

Dear Mr. Gilmore:

Mr. Marks writes me as follows: "Mr. White has seen a large corner building in Clerkenwell Road, Merchant's District, six floors, which I am guaranteeing the rent for - £420 per annum, but we have to pay £170 to get in. This guarantee I must ask Mr. Edison or some one to give me an indemnity for, as, naturally, I do not want to be liable for £420 per annum myself. I do not like to sign it as attorney for Mr. Edison, it being a financial matter, so I have given my own name in preference."

I do not quite understand why Mr. Marks has referred this matter to me instead of to you. I think he should understand that I only act as counsel for the National Phonograph Company, and that all matters of importance must go to you. Please do not say anything to him in regard to this, but I write you about it in order that he may understand your authority in the matter, and that I act only under your instructions.

Everything seems to be going on here as usual. There is nothing new in the New York Phonograph Company case except a desire on Hicks' part to have you here for examination. There will,

Mr. Gilmore -2-

however, be no trouble about that, as, if he tries to make any trouble about it, Mr. Griggs will arrange to have you committed for contempt and fined one dollar for not appearing, and take the matter to the Circuit Court of Appeals, and from there to the United States Supreme Court.

I find that in all probability, the Western Electric Company is backing Gladstone in the sale of his battery supplies. We have been unable to purchase any directly from his company, but have just gotten some from the Western Electric Company. I expect to file a bill against them, as that is the only way to reach Gladstone.

The Graphophone Company has managed to interest Falmestock in their business, and are now openly backing the New York Phonograph Company. I learn, however, that Falmestock is getting tired of advancing money, and as Hicks will not work without being paid for it, there has been a cessation of activity.

It seems to me that this will be a good time for Dickinson's suit for a receiver for the Graphophone Company to be started, and will consult Mr. Edison about the matter. Dickinson himself is evidently unwilling to spend any money, but as the Graphophone Company is going down the hill so rapidly, I think it would be as well for us to give them an additional push.

Yours truly,

replied
HWH-EP.

Legal Department.

*Thomas A. Edison
National Phonograph Co.
Edison Manufacturing Co.
Bates Manufacturing Co.
Edison Storage Battery Co.*

*Telephone 460 Orange,
Cable Address 'Legal, Orange.'*

*Frank L. Dyer, Counsel
Frank E. Dunlop, Assistant Counsel
Delos Middleton*

Subjects:

Orange, N.J. March 27, 1905.

New York Company vs. National Co:

Charles L. Buckingham, Esq.,
36 Park Row,

New York City.

Dear Mr. Buckingham:--

In looking over some old papers yesterday that came up from Judge Hayes' office I find a number of printed exhibits that were evidently used in some of the early suits against the Edison Phonograph Works on the Bell & Tainter patents. I find in these papers a number of interesting things that have some bearing on the New York Phonograph Company suit, and of which you may not have been informed.

In a "Preliminary Prospectus of the Metropolitan Phonograph Company", issued "For Private Distribution", reference is made to "the period covered by the said exclusive license, namely, fifteen years". A similar statement appears in the "Preliminary Prospectus of the New England Phonograph Company".

Sometime in 1889, an explanatory circular was issued by the North American Phonograph Company, from which I quote:

"The North American Phonograph Company constitutes itself to all intents and purposes the parent company, in the

Charles L. Buckingham, Esq. - 2

promotion and development of the phonograph and phonograph-
graphophone business. It has had organized and licensed
within prescribed territorial limits, local companies which
have exclusive control of the business, within the limits
of the territory assigned to each, somewhat after the manner
in which telephone companies have been organized; but upon
more liberal terms, for the reason that the field of oper-
ation of these instruments is so immeasurably greater than
that of telephones as to warrant better terms to the licensees
and lower prices to the public, while at the same time ade-
quate returns can be readily secured to the companies. A
cash payment has been required from each for their exclusive
license for five years. This brings in cash into the Treas-
ury of the parent company one million and twenty-five thou-
sand dollars. The larger part of this sum has already been
received.

"In addition to this, the local companies, (except
three of those first organized) are required to deposit
twenty per cent (20%) of their capital stock with the Central
Trust Company of New York, to be delivered to the North
American Phonograph Company at the expiration of their five
years' license, when they will receive an extension of the
same to March 26, 1903. The exceptions for this - the three
companies referred to above - will be obliged to increase
their capital stocks twenty-five per cent (25%) at the expi-
ration of their five year license, and deliver it to the
North American Phonograph Company, receiving in exchange au-
thority to continue the business until March 26th, 1903.
This will bring into the Treasury of the parent company
about four million dollars of the stock of the local com-
panies."

In a letter dated January 20, 1890 from Jesse H.
Lippincott to Messrs. Spencer Trask & Company, the following
statements are made:

"In the formation of these sub-companies, the North
American Phonograph Company received in cash \$828,267, and
is to receive a further sum of \$235,733 in payment for
exclusive licenses in the respective territories granted to
the various sub-companies, running five years, and in addition
received, or is to receive from Trustees who now hold the
securities for the benefit of this Company, \$1,400,000
of the stock of the sub-companies. In addition to this
there has been or will be deposited with the Central Trust
Company, Trustees, to be delivered to the North American

C. L. Buckingham, Esq. - 3

Phonograph Company at the end of the five years, stock in the various local companies to the amount of \$4,100,000. For this the sub-Companies will receive an extension of their exclusive license for nearly ten years more."

It seems to me that these statements, and particularly the words which I have underscored, make it quite clear, as a matter of contemporaneous evidence, that it was understood perfectly well that the several extended licenses expired March 26, 1903, and also that the cash payment in every case only applied to the first term of five years.

Yours very truly,

C
Frank L. Hill

FED/MM.

Legal Department:

*Thomas A. Edison
National Phonograph Co.
Edison Manufacturing Co.
Bates Manufacturing Co.
Edison Storage Battery Co.*

*Telephone 400 Orange
"Callechittins" Legal Orange"*

*Frank L. Dyer, Counsel
Frank C. Bradley, Assistant Counsel
Peter H. Holden, Assistant Counsel*

Subject:

Orange, N.J. April 28, 1905.

Charles L. Buckingham, Esq.,
38 Park Row,
New York City.

Dear Sir:--

In accordance with the request recently made by you and Mr. Felsér, I have gone over the Edison patents with a view of ascertaining the facts as to expiration of the patents under which we are or have been operating in the sale of phonographs, blanks, etc., omitting all process patents used at the Works, since there is no likelihood that we will ever care to do any manufacturing outside of New Jersey. I have a list of the foreign patents upon the Edison inventions in this art, giving usually the dates of application and of issue, but I have no way of determining what inventions are disclosed in these various patents, and do not see how this information can be obtained except by looking up the foreign patents in the Patent Office Library or possibly in the Astor Library. The patents which are most likely to shorten the term of the United States patents are those of countries such as France, Italy, Spain, etc., where the grant of a patent occurs very shortly after the filing date.

Charles L. Buckingham, Esq. - 2

The following report is therefore based almost wholly upon the Pelzer letter of May 10, 1905.

I find that the following patents either have now expired or will have expired by October 1, 1905.

- 382,416 - May 8, 1888, Return Screw - will expire May 8/05
- 382,418 - May 8, 1888, Blank with Tapering Bore. Probably has expired with Austrian patent, but would expire May 8, 1905 in any event.
- 382,462 - May 8, 1888, All Wax Blank - will expire May 8/05 if it has not already expired.
- 386,974 - July 31, 1888, Tapering Mandrel - has expired
- 393,465 - Nov. 27, 1888, Turning-off Blank by diagonal knife - has expired.
- 393,466 - Nov. 27, 1888 - Retarded Diaphragm - has probably expired with French patent.
- 393,966 - Dec. 4, 1888 - Art of Recording by forming abrupt waves - same as 393,466.
- 393,967 - Dec. 4, 1888 - Art of recording by cutting the groove - same as 393,466.
- 393,968 - Dec. 4, 1888 - Retarder with cutting edge in advance of stock - same as 393,466.
- 397,280 - Feb. 5, 1889 - Retarding Devices, broad patent - has expired.
- 400,646 - Apr. 2, 1889 - Glass Diaphragm - has expired.
- 414,760 - Nov. 12, 1889 - Travelling Chute for chips - has expired.
- 430,274 - June 17, 1890 - Metallic Soap Blank - has expired
- 430,278 - June 17, 1890 - Curved Edge Recorder; Ball Reproducer; Floating Weight - has expired
- 448,780 - March 24, 1891 - Diagonal Knife for turning-off blanks - has expired.

Charles L. Buckingham, Esq. - 3

- 465,972 - Dec. 29, 1891 - Split Feed Nut and Spring; Spring Lock for End Gate; Knife Passing through chute; Lift lever; knife, stem and clamp. Has expired.
- 484,583 - Oct. 18, 1892 - Jewel Recorder - will expire Sept. 8, 1905
- 484,584 - Oct. 18, 1892 - Jewel Reproducers - will expire Sept. 8, 1905.
- 499,879 - June 20, 1893 - End Gate carrying outer bearing - has expired.
- 622,643 - April 11, 1899 - Floating Recorder - will expire Sept. 8, 1905.

The following patents are important, in that we either use the invention or it is quite likely that we will want to use the same. I cannot say whether they have expired or not, because of my lack of data as to foreign patents. These patents are as follows:

- ✓ 400,647 - dated April 2, 1889. It might be contended ~~that our invention is covered by claim 2, since our invention is covered by claim 2, lower than our recording point.~~
- ⊗ 400,648 - dated April 2, 1889. Covers blanks made of a mixture of wax, such as ceresin, with stearic acid.
- ✓ 437,425 - dated Sept. 30, 1890. Blunt Edge Recorder. We are on record in the Chipot cases (in Fischer deposition) as maintaining that our recording stylus embodies the invention of this patent.
- ⊗ 454,941 - dated June 30, 1891. Built-up Diaphragm.
- 456,301 - dated July 21, 1891. We may wish to use the principle of the horn shown in Figure 6 and covered by claim 10, although no one is working on it at the present time to my knowledge.

Charles L. Buckingham, Esq. - 4.

414,761 - dated November 12, 1889. Tubular blank with internal ribs.

In addition to the patents above enumerated, we are, of course, using the Model "C" Button Ball patent, reissue No. 11,857, which has many years to run. The application for this patent was filed September 21, 1899, which is, of course, several years after the North American Company became insolvent. This patent will not expire until June 26, 1917.

I am sorry that I cannot give you more complete information, but this can probably be obtained, as I suggest, by looking up the foreign patents which are undoubtedly on file in the Patent Office Library, and which can be found from the patent numbers and dates which I shall be pleased to send you at any time.

I remain,

Yours very truly,

DH/MM.

Frank L. Byrd

CHARLES L. BUCKINGHAM,
ATTORNEY AND COUNSELLOR AT LAW,
1075 BROADWAY,
NO. 25 PARK ROW.

Dictated.

NEW YORK, May 2, 1906.

Mr. Thomas A. Edison,
Orange, N.J.

Dear Sir:-

We this morning settled the injunction decree and the order staying the injunction before Judge Hazel, and all very much to my satisfaction.

Hicks wanted an injunction against the National Phonograph Company covering all phonographs made by it. The order, however, is modified so as to apply only to such rights as the complainant may have under its contracts with the North American Company.

Hicks also wished to have us, pending the appeal, give a bond for all damages, profits and costs. He also asked that we be required to file with the court, pending the appeal, weekly statements specifying all of our customers, the amount of business &c., according to Judge Wheeler's decision in Edison v. American Mutoscope Company. All of this, however, the court denied, except that we are to file a bond before the first of July in the amount of \$10,000, as security for their profits, damages and costs. Of course Hicks wanted a very much larger bond. This circumstance would hardly be to the advantage of complainants for advertising purposes when it is remembered that the ten thousand dollar bond is to cover not merely their costs but all of the profits accruing to us or damages suffered by complainant during the period of appeal.

T.A.E., 2.

Specifically, the stay requires that our appeal shall be perfected and a bond provided prior to July 1, 1905, in which event the stay will be effective until the next term of the United States Circuit Court of Appeals; and upon docketing the case as a preferred cause at the next term of the court, the stay is to be continued "till the hearing, decision and mandate of said United States Circuit Court of Appeals."

Two or three other objections of ours were agreed to by the court, so that the injunction decree and stay comply fully with our requests, except that I wished to give a five thousand instead of a ten thousand dollar bond.

Very truly yours,

**Legal Department Records
Phonograph - Case Files**

United States of America v. James L. Andem

This folder contains material pertaining to the criminal suit brought against James L. Andem in the U.S. District Court for the District of New Jersey. The case involved Andem's alleged forgery in representing himself as the secretary of the New England Phonograph Co. in May 1905. He was found not guilty in May 1908. The selected items consist of letters and other documents from 1907 and 1908 concerning the context and progress of the litigation.

[FROM ROBERT H. MCCARTER]

Newark, N. J. September 26th, 1907.

Hon. John B. Vreeland,
United States Attorney,
Newark, N. J.

My Dear Judge:-

Obedient to your suggestion I beg to present a short resume of my views of the law in reference to the alleged forgery by James L. Andem.

A bill in equity was filed in the United States Circuit Court for the District of New Jersey on May 15th, 1905 in the name of the New England Phonograph Company. To this bill a red wafer seal without any impression on it whatever was attached and under the seal was written "Attest James L. Andem, Secretary" meaning "This is the seal of the Company". It is a fact that the red wafer was not the seal of the company nor was Andem its Secretary and that Andem in filing the bill with that false seal and false attestation was guilty of uttering or procuring to be uttered a forged seal. It will be shown by indisputable proof not only was this red wafer not a seal of the company but that Andem knew it was not and that as he was not the Secretary of the Company he had no authority whatever to attach the wafer to the document in question.

Upon this assumed state of facts my view is that the crime of either forgery or procuring or uttering a forgery was committed.

The General Statutes of July 7, 1898 (3 U. S. Compiled Statutes page 3652, section 2) provides,

"That when any offense is committed in any place, jurisdiction over which has been retained by the United States or ceded to it by a State, or which has been purchased with the consent of a

#2. J. B. V.

State for the erection of a fort, magazine, arsenal, dockyard, or other needful building or structure, the punishment for which offense is not provided for by any law of the United States, the person committing such offense shall, upon conviction in a circuit or district court of the United States for the district in which the offense was committed, be liable to and receive the same punishment as the laws of the State in which such place is situated now provide for the like offense when committed within the jurisdiction of such State, and the said courts are hereby vested with jurisdiction for such purpose; and no subsequent repeal of any such State law shall affect any such prosecution".

There is no provision in the Federal Statutes for the above mentioned crimes so that we turn by force of the quoted provisions, to the New Jersey Statute as well as to the common law. The Statute section 197 of the Crimes Act reads,

"Any person who shall falsely make, alter, forge or counterfeit, or cause, counsel, hire, command or procure to be falsely made, altered, forged, or counterfeited, or willingly act or assist in the false making, altering, forging or counterfeiting any **** character **** with intent to prejudice, injure, damage or defraud any person or persons, body politic or corporate, or who shall utter or publish or cause, counsel, hire, command or procure to be published as true any of the above false, altered, forged or counterfeited matters **** knowing the same to be false, forged or counterfeited, with intent to prejudice, injure, damage or defraud any person or persons, body politic or corporate, shall be guilty of high misdemeanor."

My view is that the affixing of the false seal with the pretense that it was the genuine seal of the company to this document was directly within the portion of the statute above quoted.

In *Graham vs. People*, 1 Park. Crim. Reports, 141, it was held that the forging of a stamp or corporate instrument was the subject of a forgery. It would seem too that this word character was put into the statute to cover just such devices as seals and other like symbols. What other purpose did the legislature have in using the word "character" if it was not to convict one of falsely simulating a symbol like a seal and seeking to evade an indictment

#3. J. B. V.

on the ground that he had written or printed nothing.

Regardless, however, of the statute, the offense was a forgery at common law. Mr. Justice Blackstone defines the word "forgery" "The fraudulent making or altering of a writing to the prejudice of another's right". 4 Black. (Cooley) p. 247.

Buller J. defines the word "The making of a false instrument with intent to deceive.

Baron Eyre says "A false signature with intent to deceive; the false making of an instrument which purports on the face of it to be good and valid for the purposes for which it was created, with a design to fraud".

It should be borne in mind that although it can be proven that Andem had no authority or power, or apparent authority or power, to attest the seal for the reason that he was not the agent or Secretary of the corporation, yet it is not the signing of Andem's name that is claimed to be a forgery or counterfeit, but it is the affixing of the seal and attesting it, i.e. stating it to be the seal of the Company which constitutes the crime.

I am fully aware that if one executes an instrument purporting on its face to be executed by him as agent of a principal therein named, he is not guilty of a forgery though he has in fact no authority from such person to execute it, because there is in fact no false making of the instrument, but merely a false assumption of authority.

Of course, however, in this case, the fact of Andem having no authority to affix the seal is a link in the chain of the act of forgery complained of. And it is forgery to attach one's name to an instrument when done with intent to defraud. Whartons Criminal Law, 4th Ed. Sec. 434. People v. Peasock, 6 Cow. 72 R. vs.

#4. J. B. V. I
Rogers, 8th C and P 629."

I think, therefore, that it is plain from any definition of forgery at common law, that the affixing of a seal which is in itself a counterfeit, comes within the definition of the word forgery.

It may be asked what is the meaning of the term "counterfeit". I find Webster gives the following definition - "That which is made in imitation of something with a view to deceive, by passing the false for the true."

The law seems to be settled that the forgery or counterfeiting of instruments need not be perfect in its resemblance to the kind it was designed to represent, it is sufficient that it be calculated to deceive and that too not experts or persons of experience, or very cautious persons, but persons of ordinary observation or ordinary business capacity.

See 17 N. J. Law 327; 60 ed. 576; U. S. vs. Mitchell
1 Bald. C. C. 336.

If the bill be filed without the authority of the Company, if the seal affixed and attested is a forgery, then the Company have been defrauded by the bringing of a suit which Andem knew must be defeated by reason of the release given as aforesaid, they being compelled by a false representation to pay the costs of such a proceeding. Not only are they fearful if Andem be allowed to bring similar actions in other states that great loss will be further sustained, but they believe that it is time that the criminal law should step in and put an end to acts committed which are contrary to the criminal law of this state.

As to the form of the indictment reference is made to the following cases:

State vs. Jones, 9 N. J. Law, 367.
State vs. Robinson, 16 N. J. Law, 607;

#5. J. B. V.

State vs. Van Hart, 17 N. J. Law, 327;
State vs. Redstrake, 39 N. J. Law, 308;
State vs. Van Houton, 3 N. J. Law, 429;
Rohr vs. State, 60 N. J. Law, 376.

It would therefore appear that the crime of forgery as defined either at common law or under the statutes has been committed. The gist of the action is the uttering of the forged seal by filing the paper in Trenton in a building on a territory ceded to the United States and therefore the Federal Statute above referred to applies. See 24 Fed. Rep. 726, 71 ed. 545.

While it is true that if this offense were being prosecuted in the State court the two years limitation would apply, yet section 1044 of the United States Revised Statutes, plainly applicable here in view of the commitment of the offense in the federal territory, provides that no person shall be prosecuted, tried or punished for any offense not capital **** unless the indictment is found within three years next after such offense.

If any further doubts present themselves to you, however, Mr. Herbert W. Knight or I will be glad to endeavor to dissipate them.

Yours very truly,

RHM/AGB.

Mr. F.L. Dyer:

The "Morning Star", Newark, N. J., of to-day, copy of which I hand you herewith, has an article by Andem and his crowd in the New England case. In the absence of Mr. McCarter and yourself at Trenton, as well as the absence of Mr. Knight, I could not, of course, arrange for an answer to be made, and I did not care to make any statement myself. I called up the "Star", however, and succeeded in getting at Mr. James Martin, the President, and told him that we did not consider that the article should have been put in in any such way without at least giving us a chance to set forth our side of it. He stated that they had always taken the stand that no article should be published until both sides had been heard and that this was one of his standing rules. It looks, though, as if the rule had not been followed out in this case. He was perfectly willing to put in any statement that I cared to make, but I told him that I was not prepared to make any statement but would refer the matter to you so that you could prepare a statement, or, on the other hand, that I would refer it to Mr. McCarter so that he could submit a statement.

I understand that Mr. McCarter will be back about 1 o'clock, and to this end I have just written him a letter asking him to make a statement for us, denying all the allegations in toto, and stating in substance that matters of this kind we do not care to bring before the public for adjudication, as the proper place is the Court. I do not suppose that Mr. McCarter will want to make anything more than a general statement, if any; however, we should make some reply, and I wish, therefore, if you get back in time, that you would take the matter up with Mr. McCarter and formulate some answer to offset the statements contained in this article.

I am going to New York; otherwise I would be here to discuss

F.L.Dyer.

(2)

10/3/07.

it with you.

I would say further that Mr. Edison is very much incensed that an article of this kind should be put out by a local paper, without at least giving us an opportunity to refute their statements.

10/3/07.

W. E. Gilmore.

Enc-

P.S. Mr. Martin will be absent this afternoon, but stated that if we desired to communicate with them we should call up Mr. Carper, to whom he will refer the matter.

THOMAS A. EDISON SEEKS DELAYS IN PHONOGRAPH SUITS

Actions Involving Millions and Control of Sale of Machines in New England

INVENTOR MUST ANSWER CONTENT ACTION OCT. 11

New England Phonograph Company's Directors, Minority Charges, Delayed Trust

THOMAS A. EDISON, inventor of the gramophone, has been endeavoring through two companies in New England to obtain a monopoly of the sale of his gramophone records in that section of the United States. He has been endeavoring to obtain a monopoly of the sale of his gramophone records in that section of the United States. He has been endeavoring to obtain a monopoly of the sale of his gramophone records in that section of the United States.

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Following this decision, Edison's competitors in the New England market, including the New England Phonograph Company, faced a significant challenge. Edison's actions were seen as an attempt to monopolize the market and delay the entry of his competitors. The court's decision was a clear statement of Edison's legal position, and it was a major setback for his competitors.

The case involved a complex set of legal and financial issues. Edison's competitors argued that his actions were an attempt to monopolize the market and delay the entry of his competitors. The court's decision was a clear statement of Edison's legal position, and it was a major setback for his competitors.

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NATIONAL PHONOGRAPH COMPANY

Oct. 3, 1907.

Robert H. McCarter, Esq.,
McCarter & English,

Prudential Building, Newark, N. J.

Dear Mr. McCarter:

I tried to reach you on the telephone this morning, overlooking the fact that you were to be in Trenton, and I understand from your office that they expect you back about 1 o'clock.

I wish you would secure a copy of this morning's "Morning Star" and read over the article on page 8, headed "Thomas A. Edison Seeks Delays in Phonograph Suits." I realize that you have just been brought into this case and may not, therefore, be thoroughly familiar with all of the details.

I called up Mr. James Martin, the President of the company, this morning and told him that in the absence of all of our attorneys Mr. Edison and myself desired to emphatically object to their putting out articles of this kind, without at least hearing our side of the story. Mr. Martin stated to me that his policy had always been never to insert articles of this character until both sides had been heard, but it looks very much as though his rule had been broken in this instance. Mr. Edison is very much incensed, as well as myself, that statements of this kind should be made, knowing that they are far from the truth. Furthermore, I do not see why the Newark paper should go on and discuss the

10/3/07.

NATIONAL PHONOGRAPH COMPANY

Robert H. McCarter.

New York case as well. It looks to Mr. Edison and myself as though this may be a paid article, and if this journal is of that character, then, of course, we have nothing to say. I have just sent a copy of the paper to Mr. Dyer, hoping that he will get back in time to take the matter up with you by telephone or otherwise so that some reply can be prepared that will answer the case.

Furthermore, I would ask, if you have any influence whatever with any of the individuals connected with this institution, that you impress upon them the necessity of at least granting us a hearing before publishing articles of this character. It would seem to me that a periodical published in Essex County should at least have some consideration for an institution like ourselves, with a pay-roll of \$50,000 per week. In addition to this the maligning of Mr. Edison personally is absolutely uncalled for.

Mr. Martin stated that he would be ^{not} in his office this afternoon, but that Mr. Carper would be on hand and that he would leave word for him to insert anything that we desired to say in answer.

Yours very truly,

WEG/IWW

President.

Enc-

OFFICE OF THE
UNITED STATES ATTORNEY, DISTRICT OF COLUMBIA,
WASHINGTON, D.C.

December 4, 1907.



Dear Sir:

Enclosed please find my report on James J. Anken and also a receipted bill for my fee which you kindly paid me when you were in Washington.

Thanking you for this favor and hoping that I may be able to serve you again, I am,

Sincerely yours,

A handwritten signature in dark ink, appearing to read "John F. Helm".

John F. Helm, Esq.,
Prudential Building,
Newark, N. J.

[ENCLOSURE]

OFFICE OF THE
UNITED STATES ATTORNEY, DISTRICT OF COLUMBIA,
WASHINGTON, D.C.

REPORT ON JAMES L. ASHBY:

About 64 years of age.

Was Lieutenant on Gen'l Bank's Staff, U. S. A. during
Civil War.

Came to Washington soon after war.

Was Reporter to Southern Claims Commission until Com-
mission expired.

Held a position in Census Office during the Census of
1860.

After serving about two (2) years in Census Office, he
became a general shorthand reporter going work around the
courts and with committees of Congress until 1866 when he went
to Cincinnati, Ohio, and there for about three or four years
was connected with the Ohio Phonograph Company.

From Cincinnati he went to New York City where he has
been ever since engaged in phonographic work and also in the
employ of the New York City Government.

The criminal records of this District show that no criminal
proceedings were ever instituted against him; and the civil
records show that there are no judgments standing against him.

JOHN E. HELM

CARE ADDRESS
HELM & KNIGHT
NEW YORK

LAW OFFICES

HELM & KNIGHT

PRUDENTIAL BUILDING, 705 BRAD ST., NEWARK, N. J.
221 BROADWAY, NEW YORK, N. Y.

HERBERT W. KNIGHT

TELEPHONE
382 NEWARK, N. J.
8280 CANTON, N. Y.

No Cash

Answer

Newark, N.J. April 29, 1906.

Thomas A. Edison, Esq.,
Orange,
N. J.

*Mr. Dyer -
How about this*

Dear Sir:-

Pursuant to instructions Mr. Helm and myself proceeded to Trenton, N.J. to-day where the matter of securing a new indictment in the Andem forgery matter was presented to the Federal Grand Jury.

As you will doubtless recall, it was considered advisable to seek a new indictment because the present indictment alleges that the ground upon which the Government building stands in Trenton, was ceded by the State to the Government, while, as a matter of fact, it was purchased by the Government from the State. While this slight variance is not by any means fatal, it was deemed by Mr. Dyer and ourselves that it was better to be on the absolutely safe side and secure a new indictment alleging that the property was purchased by the Government from the State instead of ceded by the State to the Government. This was the only change sought in the indictment, for as you know the rest of the indictment has been passed upon by Judge Lanning, and he has written an opinion sustaining it in full after hearing a long argument directed against it on demurrer by counsel for Andem.

The following witnesses were examined: A clerk from the office of the Clerk of the Circuit Court, who produced the original bill; Joseph F. McCoy, John E. Helm and the writer.

Before any witnesses were examined, I understand that Mr. Lindsay, the Assistant District Attorney, made a statement intended to put the Grand Jury in possession of a knowledge of the facts and circumstances of the case.

Ex-Senator Johnson of Bergen County was foreman of the Jury and there were several other lawyers, members of the body.

I am informed that after the testimony was in some of the lawyers on the jury raised the following points:

1. That the present indictment is sufficient inasmuch as it alleges the crime was committed within the jurisdiction of the U.S. Courts, and whether that jurisdiction was obtained through a cession or a purchase of the property is immaterial.

JOHN E. HELM

CABLE ADDRESS
HELM | NEWARK
NEW YORK

LAW OFFICES

HELM & KNIGHT

PRUDENTIAL BUILDING, 728 BROAD ST., NEWARK, N. J.
281 BROADWAY, NEW YORK, N. Y.

HERBERT W. KNIGHT

TELEGRAMES
882 NEWARK, N. J.
8820 OAKLAND, N. Y.

T.A.E., ESQ.-2

2. That inasmuch as the sufficiency of the present indictment has been passed upon by Judge Lanning, a change is inadvisable.

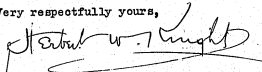
3. That if a new indictment were found there would probably be another demurrer filed on some grounds not raised by the former demurrer, and the case might be, if not jeopardized, at any rate, delayed.

And that for these reasons it was better to let the matter go to trial on the present indictment.

I am further advised that on a vote being taken the result was that a new indictment was not ordered.

I had some conversation with the Assistant District Attorney as to a day being set for trials. He said that the petit jury would be in attendance on May 12th next and the Andem case had better be tried during that or the following week.

Very respectfully yours,



HWK/vb

[INCOMPLETE]

BOX No. 1

- STATEMENT FOR GRAND JURY -

I appear as Counsel for Thomas A. Edison, with whom I have been associated for the past ten years. Much that I shall say is based on what I have been able to ascertain from Mr. Edison's records and from the printed books, but events which have occurred during the past ten years are based almost wholly on my personal knowledge. Mr. Edison as a man, as a scientist, and as a citizen of this State, needs no defense or support of mine. The State is proud of him as her foremost son whose reputation is not confined to this country alone, but is world-wide. Yet, you gentlemen must have seen from time to time in the public press, articles which purport to charge Mr. Edison with many serious offenses or crimes in connection with his invention and development of the phonograph. Wild stories have been circulated charging him with defrauding companies and individuals out of millions of dollars, to which they are entitled. If the stories were true, Mr. Edison would not be entitled to common respect. He has endured these aspersions on his character for more than six years and has treated them with silence, feeling sure of the confidence and respect of his fellow citizens. He has submitted to the annoyance, harassment and expense of almost three hundred suits brought either against him personally or against his representatives for whom he feels responsible; yet, up to the present time nothing has been accomplished by these suits, nor do Mr.

[INCOMPLETE]

Edison's attorneys believe that even in a technical sense, can these suits be successful. In the attacks which Mr. Edison has encountered, directed not only against his reputation and integrity, but against his business interests, he does not stand alone. It is unfortunately true in this country that most successful men are the objects of similar attacks. Our very lax laws as to slander and libel and the ease and economy with which suits can be brought make such a thing possible. All the attacks and all the suits and all the annoyance and unjust newspaper articles have been fostered by one man - - a single individual cherishing personal revenge and actuated I am sure by the meanest and most sordid motives. This man is James L. Andem of Bloomfield. Before considering Mr. Andem's relations to these matters, let me explain the situation which existed before his appearance. When Mr. Edison perfected the phonograph in 1888, he sold the invention and patents to the North American Phonograph Company, a Philadelphia concern, reserving to himself the right to ~~the~~ manufacture the machines for that company. The Manufacturing Company was known as the Edison Phonograph Works, which still exists. Mr. Edison was to receive \$500,000. for the phonograph, but as a matter of fact he obtained much less, and when the North American Company failed a few years later, whatever Mr. Edison had obtained was practically wiped out by the indebtedness due the Phonograph Works by the North American Company. Therefore, in a strictly moral sense, Mr. Edison obtained practically nothing for his phonograph. The North American Company was a stock-jobbing concern, and was manipulated by men

[INCOMPLETE]

who were more anxious to exploit the stock than to exploit the phonograph. The rights to the phonograph for the several states was found out by the North American Company and more than thirty local companies were formed, most of which were also merely stock jobbing concerns. Mr. Edison knew nothing of this, and ^{expected} that the business would be prosecuted in good faith, put all of his money in the Edison Phonograph Works and began to manufacture phonographs in large quantities. About the year 1894, practically all of the local companies had failed and the North American Company went into the hands of a receiver. Efforts were made to keep the enterprise afloat, but they were unsuccessful; the time had not come when the phonograph was wanted. The local companies abandoned the business. It was necessary to wind up the affairs of the North American Company and Mr. Edison was the principal and only large creditor. To protect his claim he bought the assets of the North American Company at public auction. Any one could have bid against him, but the public did not want the phonograph and the local companies had become tired of the whole thing. The assets of the North American Company were principally patents which have now expired, but Mr. Edison has often told me that when they were bought by him he looked upon them as practically worthless. He saw but little chance of reviving the business, but he had a large manufacturing plant on his hands and something had to be done to try to make it pay. A new company was organized in 1896, called the National Phonograph Company, and started in to sell the phonographs on a small scale. The business slowly grew, many important inventions and improve-

[INCOMPLETE]

ments were made that changed the phonograph from a scientific toy to a commercial amusement device. To keep the Edison Phonograph Works going, much other business was turned over to it. By reason of honest methods, but largely because of the genius of the man whom Mr. Edison had placed in charge of the phonograph business, the enterprise became slowly successful. Those were anxious years. About 1901, the business began to pay and since has been very profitable. Nothing had been heard about the old local companies growing out of the North American Phonograph Company. They ^{had} all been dead for almost ten years. They had never sold a phonograph and never asked to be allowed to sell one and appeared only too glad to be out of the business. In 1899 or 1900 Mr. Andem who had been connected with the Ohio Company and who saw that the phonograph business could be made successful, conceived the idea of reviving the local companies by the bringing of numerous suits against Mr. Edison, attending to participate in the business. Andem therefore succeeded in making contracts with a large number of the local companies under which he was allowed to sue in their name and was to obtain 50% of any recovery which he might secure. In most cases, if not all cases, he was authorized to compromise for a few thousand dollars. Out of these contracts grew the three hundred suits to which I have referred but most of them have been conducted in the newspapers, rather than in the courts. Mr. Andem has been shrewd enough to avoid, up to the present time, any criminal responsibility, so that there was nothing else to do, but to contest the cases, but you will readily understand that this has been

[INCOMPLETE]

a very expensive thing and has so far cost us between one hundred and two hundred thousand dollars. As might be expected, however, we now find that Andem has overstepped the mark and in his eagerness has committed a criminal act no less than that of forgery, as I believe, and for which, we ask that he be indicted. The matter arose in connection with one of these local companies, called the New England Phonograph Company. In 1902, a suit was brought in the name of the New England Phonograph Company against Mr. Edison and it was felt that ^{the} most economical solution would be to buy the New England Company stock, which could be obtained on the market for from twenty-five cents to a dollar a share. More than ten thousand shares were secured representing more than half the entire stock,

**Legal Department Records
Phonograph - Case Files**

***United States of America on the Relation of National Phonograph
Company v. Frederick I. Allen, Commissioner of Patents***

This folder contains material pertaining to public use proceedings and subsequent litigation brought by the National Phonograph Co. in the U.S. Patent Office, Supreme Court of the District of Columbia, and Court of Appeals of the District of Columbia. The proceedings were initiated in May 1899 and involved Edison's attempt to block applications by Leon F. Douglass and Thomas H. Macdonald for patents on a larger-diameter record with a high surface speed. The selected items consist of the following portions of the printed record on appeal: index, petition for mandamus, petition for public use proceedings, and affidavits of Edison and William E. Gilmore.

*Legal Box 99
Folder 4*

TRANSCRIPT OF RECORD.

Court of Appeals, District of Columbia

OCTOBER TERM, 1902.

No. 1257.

No. 21, SPECIAL CALENDAR.

THE UNITED STATES OF AMERICA ON THE RELATION
OF NATIONAL PHONOGRAPH COMPANY, APPELLANT,

vs.

FREDERICK I. ALLEN, COMMISSIONER OF PATENTS.

APPEAL FROM THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

FILED NOVEMBER 13, 1902.

COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

OCTOBER TERM, 1902.

No. 1267.

No. 21, SPECIAL CALENDAR.

THE UNITED STATES OF AMERICA ON THE RELATION
OF NATIONAL PHONOGRAPH COMPANY, APPELLANT,

vs.

FREDERICK I. ALLEN, COMMISSIONER OF PATENTS.

APPEAL FROM THE SUPREME COURT OF THE DISTRICT OF COLUMBIA.

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In the Court of Appeals of the District of Columbia.

THE UNITED STATES OF AMERICA on the Relation
of National Phonograph Company, Appellant,
vs.
FREDERICK I. ALLEN, Commissioner of Patents. } No. 1257.

a Supreme Court of the District of Columbia.

THE UNITED STATES OF AMERICA on the
Relation of National Phonograph Company,
Relator,
vs.
FREDERICK I. ALLEN, Commissioner of Patents,
Respondent. } No. 45225. At Law.

UNITED STATES OF AMERICA, } ss:
District of Columbia,

Be it remembered, that in the supreme court of the District of Columbia, at the city of Washington, in said District, at the times hereinafter mentioned, the following papers were filed and proceedings had, in the above-entitled cause, to wit:

1 Petition for Mandamus.
Filed February 7, 1902.

In the Supreme Court of the District of Columbia.

THE UNITED STATES OF AMERICA on the
Relation of National Phonograph Company,
Relator,
vs.
FREDERICK I. ALLEN, Commissioner of Patents,
Respondent. } At Law. No. 45225.

The above-named relator, National Phonograph Company, respectfully represents:—

1. Your relator is a corporation duly organized and existing under the laws of the State of New Jersey, having its principal place of business at the city of Orange, in the county of Essex, in said State; that the respondent, Frederick I. Allen, is the Commissioner of Patents, duly qualified and acting as such, and that the said respondent was such Commissioner and acting as such on January 24,

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1902, and at the time of the decisions hereinafter complained of, and is still such Commissioner. Your relator is the owner of the patents decsere in interest have since 1889 been engaged in the business of selling phonographs and phonograph supplies made by the manufaturing licensees under said patents, the Edison phonograph works, and itself is so engaged.

2. Prior to May 1, 1896, the date of the filing by your relator of a petition to the Commissioner of Patents hereinafter referred to, your relator was informed by one Leon F. Douglass of Chicago, Illinois, that he had then recently applied for a patent on an alleged invention relating to phonographs, which alleged invention consisted in operating a phonograph at a higher speed than was at that time customarily employed by users of the phonograph. The said Douglass also informed your relator at the same time that his said application for patent had become involved or was likely to become involved in an interference with an application for patent on the same invention then recently filed by Thomas H. Macdonald of Bridgeport, Connecticut, and assigned to the American Graphophone Company. Your relator at the time of receiving this information from the said Douglass had been for some time engaged in the selling of phonographs known by the trade name of "Edison licenses, the Edison phonograph works, and particularly designed to operate at this higher speed. Your relator and its said manufacturing licensees had invested a large sum of money in the said manufactory and being advised that their legal right to manufactory and sell such phonographs was beyond question, and that they were fully protected in doing so by the Edison patents which your relator owned. Your relator was further advised that no valid patent could be secured by either the said Douglass or the said Macdonald or by any other person or the said alleged invention, because the standard phonographs which had been manufactured by the said manufacturing licensees and sold by your relator and its predecessors in interest since the year 1889 had been adapted to operate at this higher speed in the year 1889

3. It is alleged invention, and had been so publicly operated by users of such standard phonographs and by years before the filing of applications for patents by said Douglass and Macdonald; also because the "tin-foil" phonographs which had been manufactured and sold by the said Edison in the year 1877 had later had been designed to operate and had been in fact commonly and publicly operated at the said high speed; also because the said Edison made and publicly used in the year 1890 and later a machine known as the "four-hundred-three" machine, which had been designed to operate and was commonly and publicly operated at the said high speed; also because the standard graphophones which had been manufactured by the American Graphophones Com-

CO. VS. FREDERICK L. ALLEN, COM'N' OF PATENTS. 3

pany for many years had been adapted by adjustment of their speed-regulators to operate at said high speed, and had been so publicly operated by users thereof more than two years before the filing of the Douglass and Macdonald applications.

In view of these and other facts known to your relator, your relator was advised that any patent granted upon said alleged invention would not only be invalid because lacking in novelty, but also because of the statutory bar against the granting of a patent upon any invention which has been in public use or on sale more than two years prior to the filing of the application for the patent.

4. Your relator further states that notwithstanding it was advised that it could defeat any suit brought against it or its customers on any patent which might be granted either to said Douglass or said Macdonald on said alleged invention, yet your relator well

5. knew that the litigation of suits brought on such a patent would put your relator to large expense, and that the owners of such a patent could by advertising and otherwise intimidating users of your relator's phonographs, prospective purchasers of your relator's phonographs and the trade generally, greatly injure your relator's business and largely destroy the value of the investment of your relator and its manufacturing licensees in said business; and particularly that the possession of such a patent by your relator's competitor in business, the American Graphophone Company would seriously menace the business and investment of your relator and its manufacturing licensees.

Your relator was advised that the true, original and first inventor of said alleged invention was your relator's assignor, the said Thomas A. Edison, and that to prevent the grant of a patent upon the same to said Douglass or said Macdonald, it was necessary that your relator should either file an application for patent on said alleged invention in the name of said Edison and contest the question of priority of invention with said Douglass and Macdonald by an interference in the Patent Office; or that your relator should petition the Commissioner of Patents to institute public-use proceedings against the applications of said Douglass and Macdonald for the purpose of establishing the existence of the statutory bar of two years' public use against such applications. Your relator was advised, however, that the said Edison could not truthfully make the oath required on the filing of an application for patent on said alleged inven-

6. tion, because he could not truthfully swear that said alleged invention had not been in public use or on sale more than two years prior to such application, such use having been made by your relator and said Edison, and being well known to him.

Your relator, although, by reason of its ownership, of the inventions of said Edison relating to phonographs, entitled to a patent for its own benefit upon said alleged invention if such a patent could be lawfully granted at all, yet, because of the existence of said statutory bar, your relator was prevented not only from securing such a patent for its own benefit, but also from filing an application for such patent, and by means of an interference preventing either the

said Douglas or the said Macdonald from securing such patent. Your relator was advised that the only lawful course open to it, to prevent the threatened grant of a patent on said alleged invention to said Douglas or Macdonald was to petition the Commissioner of Patents to institute public-use proceedings.

4. In the year 1885, there was established in the Patent Office the practice of determining by contested *inter partes* proceedings, the question as to whether or not the granting of a patent upon a pending application was barred under section 4895 of the Revised Statutes by public use in this country for two years prior to the filing of the application for patents, of the invention described and claimed in such application, when a *prima facie* case of such public use had been made out by affidavits. This practice was based upon the decision of the supreme court of the District of Columbia in *Ex parte Van Hoffen-Alovesch*, which was decided in December 1882 (23 O. G. 209; C. D. 1883, p. 181), and was established by a decision of the Commissioner of Patents in the same case, dated February 6, 1883 (23 O. G. 2293; C. D. 1883, p. 35), approved by the Secretary of the Interior on appeal, April 17, 1883 (24 O. G. 2291; C. D. 1883, p. 114). The practice thus established has been followed by the Patent Office in subsequent cases. See *Ex parte Finch*, C. D. 1887, p. 90.

6 The practice thus established provided for a contested *inter partes* proceeding between a petitioner protesting against the granting of a patent, and showing by affidavits a *prima facie* case of public use, accordance with the practice in interference cases as defined by the rules of Practice of the Patent Office; and on points to which such practice of the United States courts in equity proceedings; and in- and out of the trial of such case as a contested case before the examiner. That practice having been established by the Commissioner of Patents, with the approval of the Secretary of the Interior, as provided for in section 4895 of the Revised Statutes, has the force of law, and upon him, after determining that a public-use proceeding should be instituted, to refer the papers to the examiner of interferences and have said proceeding conducted as a contested case and in accordance with the practice in interference cases.

7 V. On May 1, 1890, your relator filed with Charles H. Duell, then Commissioner of Patents, and the predecessor in office of Duell, a petition supported by affidavits alleging that the said Iness and Macdonald had been in public use in this country since the year 1877, being more than two years before the filing of the said application, and praying that proceedings be instituted to determine the issue thus raised. A copy of said petition and accompanying affidavits is appended hereto and marked "Exhibit A." The said petition was referred to the primary examiner having

charge of the class of phonographs, and on May 11, 1890, as the result of an informal hearing before the primary examiner, your relator filed an additional affidavit of Thomas A. Edison, elaborating the facts as to one of the items of proof; a copy of which affidavit and the accompanying letter transmitting the same to the Patent Office is appended hereto and marked "Exhibit B."

8 On June 7, 1890, the primary examiner made a report on said petition to the said Charles H. Duell, Commissioner of Patents, (copy attached, marked Exhibit "C") finding that a *prima facie* case of public use had been made out, and "recommending that public-use proceedings be instituted to determine whether any device covered by Douglas' claim has been in public use more than two years prior to Douglas' application." No reference was made in this report to the Macdonald application, although that application was referred to in said petition; but it appears by the decision of the said Charles H. Duell, dated June 30, 1890, about to be referred to, that at the time the primary examiner made this report

8 "he called the Commissioner's attention to the fact that another application, filed by Thomas H. Macdonald, disclosed substantially the same invention as that claimed by Douglas, and that one of Macdonald's claims had been suggested to Douglas, who had incorporated it in his case, and he recommended that if public-use proceedings were instituted by the Commissioner, Macdonald should be notified."

7. On June 10, 1890, the said Charles H. Duell, Commissioner of Patents, issued an order directed to said Douglas, requesting him to show cause why public-use proceedings should not be instituted against his application, the hearing on said order being fixed for June 22, 1890. A copy of said order was transmitted by letter to your relator. A copy of said order and letter is appended, and marked "Exhibit D." At the hearing on said order, counsel were heard on behalf of said Douglas on behalf of the American Graphophone Company, the owner of the invention of the said Macdonald, Charles H. Duell decided that while your relator had made out a *prima facie* case for the institution of such public-use proceedings, yet on account of the pending interference between the said applicants of Douglas and Macdonald, "such public-use proceedings should not be instituted until the said interference should be declared, so that the parties can amend their applications, and the extent of the proceeding may be more intelligently determined," as appears by a copy of the said decision attached hereto and marked "Exhibit E."

9 On July 18, 1890, the said interference between Douglas, Iness and Macdonald having proceeded to the stage contemplated by the said Commissioner in his decision of June 30, 1890, the said Commissioner instituted public-use proceedings against the Douglas application on your relator's petition, and on times for the taking of testimony. A copy of this decision was forwarded to your relator with a letter requesting your relator to furnish the

opposing parties and the Patent Office with the names and addresses of the witnesses, and the place where the examination would be conducted by your relator, and also requesting your relator to send fifty dollars to pay the expenses of the officers detailed to represent the Patent Office in conducting the proceedings. A copy of said decision of the said Commissioner, dated July 18, 1895, and the letter referred to, is appended hereto, marked "Exhibit F".

9. Your relator complied with the terms of the last-mentioned decision and letter of the said Commissioner, but before the taking of testimony had begun, further proceedings in said public-use case were suspended by the said Commissioner to await the decision in the interference case between Douglas and Macdonald.

10. On January 30, 1901, your relator having been informed that the interference between Douglas and Macdonald had been finally decided in favor of Macdonald, and being advised that the public-use proceedings directed against the application of Douglas presented only a moot question, because of the decision adverse to said

10 Douglas in said interference, your relator moved the said public-use proceedings by including the said Macdonald application therein, and further that your relator should be allowed, through its attorneys, to examine the said Macdonald application and the said interference proceedings, and be furnished by the Patent Office with copies of such portions thereof as it might desire, a copy of said motion being annexed and marked "Exhibit G". A hearing having been had upon said motion, at which all parties interested were represented by counsel, the said Charles H. Duell, Commissioner of Patents, on February 11, 1901, refused a decision substituting the Macdonald application for the Douglas application for access to and copies of the said Macdonald application and the interference proceedings. A copy of said decision of the said Commissioner is attached hereto and marked "Exhibit H".

11. Your relator thereupon filed a petition in the office of the Secretary of the Interior, praying that the decision of the Commissioner of Patents of February 11, 1901, be reviewed so far as said decision denied your relator's right to examine and take copies of the said Macdonald application and said interference proceedings. Said petition was held by the Secretary of the Interior until December 5, 1901, when it was dismissed for want of jurisdiction.

12. During the pendency of the said petition in the office of the Secretary of the Interior, the said Charles H. Duell was succeeded as Commissioner of Patents by the respondent, the said Frederick I. Allen.

11 Your relator, on January 2, 1902, moved the said Frederick I. Allen, Commissioner of Patents, in said public-use proceedings, to transmit the Macdonald file and the other papers in said proceeding, to the examiner of interferences, with the directions to proceed with the case in accordance with the rules in interference cases, and under the practice established in the Atteansek case, a copy of said motion being annexed, and marked "Exhibit

I". At the same time, counsel for the said Macdonald moved the said Commissioner of Patents to set aside said public-use proceedings and issue the patent upon the Macdonald application. After a hearing upon both the said motions, the said Commissioner of Patents, on January 24, 1902, rendered a decision denying Macdonald's motion to issue his patent, also denying your relator's motion already referred to, and ordering that the taking of testimony in said public-use proceeding begin at a day named. A copy of said decision of the said Commissioner is attached, and marked "Exhibit J".

13. Your relator further shows that by said decision of January 24, 1902, the said Commissioner of Patents has refused to follow the practice established under the statute with the approval of the Secretary of the Interior in the Atteansek case, and has decided that the public-use proceeding against the Macdonald application based upon your relator's petition shall not be conducted as a contested case or under the rules in interference cases, but shall be conducted as an investigation in which your relator has no standing as a party, but is permitted only to furnish witnesses to the facts alleged in your relator's petition; and it further appears from said decision that this anomalous proceeding, proposed by the said Commissioner of Patents is one pending in his personal office, which is not organized as a trial court, as is the office of the examiner of interferences, but under the rules of practice is a court having appellate jurisdiction only. And it further appears that your relator, even after said testimony is furnished, may not be permitted to be represented by counsel upon the hearing upon said testimony, and will not be permitted to examine the said Macdonald application or show the pertinency of said testimony upon the issue raised by the said proceeding, namely, whether or not the invention described in the said Macdonald application was in public use more than two years before the filing of said application, and will not have any of the other rights of a party to a contested proceeding in the Patent Office.

12 12. Your relator further shows that by said decision of January 24th, 1902, a copy of which is the aforesaid Exhibit J, the said Commissioner ordered: "That the taking of testimony in support of the allegation of public use begin on Monday, February 3rd, 1902, or if the witnesses cannot be produced at that time upon some day during the week then commencing, to be fixed by the protestant, and that it shall be completed with the utmost diligence." The National Photograph Company will at once notify this office and Macdonald of the names of the witnesses and the places where they will be produced for examination during the week stated. Upon its failure to do so, it will be assumed that it is no longer willing to assist this office in the investigation, and the action upon Macdonald's application will be governed accordingly. John M. Cook, law clerk, is detailed to represent the office and conduct the proceedings."

13 13. Your relator further avers, upon information and belief, that this

order was sent by the said Commissioner to Leonard H. Dyer, Esquire, the Washington representative of counsel for the National Phonograph Company, by mail, and was not received by him until the 27th day of January, 1902, which was Monday. Thereupon the said Leonard H. Dyer at once communicated with Richard N. Dyer, Esquire, the patent counsel of the National Phonograph Company in the city of New York, and who had charge of said public-use proceedings for the National Phonograph Company. The said proceedings for the National Phonograph Company, was unable to take immediate action with respect to the matter of the said order; but on Friday, the 31st day of January, at his instance, the said Leonard H. Dyer notified the said John M. Colt, referred to in the said order, of the illness of the said Richard N. Dyer, and that he, the said Richard N. Dyer, would call at the office of the said Commissioner on the following Monday, February 3rd, when he would inform the said Commissioner as to what action he proposed to take in the premises. On Monday, the 3rd of February, the said Richard N. Dyer accordingly called at the office of the said Commissioner of Patents, and informed him that he had consulted local counsel with respect to the rightful status of the National Phonograph Company in the pending public-use proceeding, and that the said company had retained counsel for the purpose of applying to the supreme court of the District of Columbia for a writ of mandamus to compel him, the said Commissioner, to recognize the right of the said com-

pany as an active participant in the said public-use proceeding upon the analogy of an interference proceeding, in accordance with the long-standing practice of the said office, heretofore set forth. The said Richard N. Dyer then and there further informed the said Commissioner that a petition for the said writ was in course of preparation, and would certainly be filed with the said week beginning February 3rd; further, that according to his, the said Dyer's, understanding of the said order of January 24th, every 3rd instant to take action, and that he would take it for granted that if application for a mandamus were made within the said week, it would be in time to anticipate any further action of the Patent Office in the public-use proceeding. To this the Commissioner apparently assented, and remarked to the said Dyer, that he considered the question to be raised by the mandamus pre-ferably settled. Thereupon the said Dyer left the office and had no further communication with the said Commissioner. The petition for mandamus was then, accordingly prepared and was taken to Orange, New Jersey, on Tuesday, the 14th of February instant, for the purpose of having the same verified by the aforesaid National Phonograph Company, which has its principal office at the said place. The aforesaid conversation between the said Commissioner and the said Richard N. Dyer occurred in the presence of the said Leonard H. Dyer, whose affidavit to that effect, together with the affidavit of the said Richard N. Dyer, is herewith filed, marked Exhibit K.

15 And the relator further shews to the court, upon information and belief, that nothing further was heard either from the said Commissioner or from the said Colt until Thursday, the 6th day of February instant, when the said Leonard H. Dyer received through the mail from the said Commissioner of Patents what purported to be a copy of an order issued by the said Commissioner, and which, after reading the language of the aforesaid order of January 24th, 1902, to the following effect:

"The National Phonograph Company will at once notify this office and McDonald of the names of the witnesses and the place where they will be produced for examination during the week stated. Upon its failure to do so, it will be assumed that it is no longer willing to assist this office in the investigation, and the action upon McDonald's application will be governed accordingly," proceeded as follows:

"The National Phonograph Company has not complied with this order; and since it is apparently not willing to produce the witnesses to the alleged public use for examination, a continuation of the investigation is impractical. The order constituting the public-use proceeding is set aside, and McDonald's application is remanded to the primary examiner for consideration and action.

F. I. ALLEN,
Commissioner.

February 6, 1902."

All of which will more fully appear from the copy of the said order marked Exhibit L which is herewith filed, and prayed to be read as part hereof.

16 While your relator does not intend to charge the said Commissioner with any fraudulent intent or wrongful purpose in issuing the said order last heretofore referred to, nevertheless he does aver that the issuance of the said order under the circumstances heretofore set forth, and especially in view of the words uttered by the said Commissioner in reply to the statement that mandamus proceedings were contemplated, and that the papers concerning the same were in preparation for filing, constitute a fraud in law upon the rights of your relator, and an attempt to deprive your relator of legal rights which had been constituted by the declaration of the aforesaid public-use proceedings, and of which he cannot be divested by the aforesaid ex parte, arbitrary and illegal order of the said Commissioner.

17 Your relator further charges that he has no relief in the premises save by a writ of mandamus, and that as he is advised by counsel an appeal or a writ of error will not lie from the action of the said Commissioner, respectively, to any superior tribunal. Further, your relator shews that the action of the said respondent in the premises is a matter of public concern, and one occurring in the administration of justice. Your relator therefore prays that this honorable court will, by its writ of mandamus, command the said respondent, the said Frederick I. Allen, Commissioner of Patents as aforesaid,

10 THE U. S. OF AMERICA ON RELATION OF NAT. PHONOGRAPH

to forthwith reinstate the aforesaid public-use proceeding, and having so done to grant to your relator the rights of a party in interest in said public-use proceeding, and to conduct said proceeding as a contested case under the practice prevailing in the aforesaid office, in accordance with the decision in the Allenock case heretofore referred to.

NATIONAL PHONOGRAPH CO.
By WILLIAM E. GILMORE, [SEAL.]
President.

LEONARD H. DYER,
RICH'D N. DYER,
R. ROSS FERRY AND SON,
Attorneys for Relator.

DISTRICT OF COLUMBIA, ss:

I, William E. Gilmore, do solemnly swear that I am the same person who has signed the foregoing petition as president of The National Phonograph Company, the relator therein, and that I am such president and have authority from the said corporation to sign the said petition and verify the same; further, that I have read the said petition and know the contents thereof; that the matters therein stated of my own knowledge are true, and that those therein stated on information and belief I believe to be true. Further, that the corporate seal hereto attached is the true corporate seal of the said Relator, The National Phonograph Company.

WILLIAM E. GILMORE.

Subscribed and sworn to before me this 7th day of February, A. D. 1902.

J. R. YOUNG, *Clerk*,
By L. P. WILLIAMS, *Act'g Ck.*

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EXHIBIT A.

Filed February 7, 1902.

In the United States Patent Office.

In the Matter of the Application of the National Phonograph Company of Orange, New Jersey, Requesting the Institution of Public-Use Proceedings. On Petition. No. 46222.

To the Honorable Commissioner of Patents:

Your petitioners, National Phonograph Company, respectfully represent:

1. Your petitioner is a corporation organized under the laws of the State of New Jersey, having its principal place of business at Orange, in the county of Essex, in said State.
2. Your petitioner is the owner of the patents of Thomas A. Edison relating to phonographs, and it and its predecessors in interest

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have since 1880 been engaged in the business of selling phonographs and phonograph supplies made by the manufacturing licensee under said patents, the Edison phonograph works.

3. Your petitioner is at the present time engaged in the sale of concert phonographs made by its licensee the Edison phonograph works, and wherein is used a soap blank having a diameter of five inches, a length of 4.95 inches and operated at a normal shaft speed of from one hundred to one hundred and twenty turns per minute, thus giving the surface speed to the blank ranging from 1670.8 to 1884.99 inches per minute.

4. Your petitioner is informed and believes that certain of its competitors or their assignors are seeking to secure a patent on a phonograph employing a waxlike record blank of an abnormally large diameter operated at or about the usual shaft speed of from 100 to 120 turns per minute, whereby a greater surface speed will be secured than is usually employed in the operation of the Standard phonographs at a corresponding shaft speed, the increased surface speed so obtained necessarily resulting in louder and clearer reproduction.

5. Your petitioner respectfully represents that the grant of a patent on a phonograph, employing a large blank operated at approximately the usual shaft speed, would result in the subjection of your petitioner to the possibility of a suit for infringement, thereby putting your petitioner to great annoyance and expense, and to possible irreparable injury.

6. Your petitioner respectfully represents that from the affidavits of Thomas A. Edison, William E. Gilmore, Walter H. Miller, Charles Worth and John F. Ott (Ed. Herovits) and made a part hereto, it appears to have been well recognized in the phonographic art that the advantages resulting from the use of high surface speed of phonograph blanks were recognized as early as 1877, and that phonograph blanks have been made of varying diameters and have been operated at varying shaft speeds with the point in view of securing superior reproduction both in loudness and clearness.

7. Your petitioner respectfully represents that in view of the public knowledge indicated by these affidavits, a patent on a phonograph having a large waxlike blank operated at or about the usual shaft speed should not be granted by the Patent Office, as it clearly covers only the recognized knowledge of a skilled person and does not cover a patentable invention.

8. Your petitioner furthermore represents that from the affidavits in question, it appears that phonographs using record blanks ranging from six and one-half to seven inches and operated at shaft speeds of about one hundred and twenty-five rotations per minute were made and sold in this country, and were in public use in this country as early as 1877, and that phonographs having waxlike record blanks capable of being operated at a high surface speed have been made and sold in this country and have been in public use in this country for more than ten years. Said affidavits also show that as early as 1860, a phonograph using wax-like record

blanks having a diameter of seven inches and operated at a shaft speed of one hundred and twenty-five rotations per minute, was made and exhibited in this country and was witnessed by a large number of persons.

Wherefore, your petitioner prays:

1. That proceedings may be instituted by the Patent Office, but at the expense of your petitioner, to determine the truth of the facts above presented, and of the facts alleged in the affidavits in question, in order that such information may be brought properly

21 to the attention of the Patent Office as will show not only that a claim on a phonograph employing a large wax-like blank operated at approximately the usual shaft speed, is unpatentable, but that it covers apparatus which has been long in public use.

2. If a novelty in a proceeding to investigate the state of the art, in addition to determining the question of public use, is considered a reason for the refusal of such an inquiry as above requested, then your petitioner requests that the office may institute public-use proceedings in connection with this matter to determine the truth of the assertion above made and contained in said affidavits, that as a matter of fact, phonographs have abnormally large blanks operated at approximately the usual shaft speed, and phonographs having wax-like blanks operated at very high surface speeds, have been in public use and on sale and have been used and sold in this country for more than ten years past.

3. Your petitioner respectfully requests that the office may designate as persons, by whom the testimony as to public use or as to Dyer, Edmonds & Dyer, a firm composed of Richard N. Dyer, Samuel O. Edmonds and Frank L. Dyer of No. 31 Nassau street, New York city.

4. It is requested as a matter of right and fairness, that full opportunity be given any person directly interested in the determination of these questions to cross-examine any witnesses who may be produced, due notice of the examination of such witnesses to be

22 given to such opposing parties.
And your petitioner will ever pray, &c.

Respectfully,

NATIONAL PHONOGRAPH COMPANY,
By WALTER S. MALLORY, President.

STATE OF NEW JERSEY, } ss:
County of Essex,

Walter S. Mallory, having been duly sworn, on oath doth depose and say, that he is president of the National Phonograph Company, the petitioner above named; that he has read the above petition and that the same is true of his own knowledge except as to such matters as are stated on information and belief, and as to such matters he believes it to be true.

WALTER S. MALLORY.

Subscribed and sworn to before me this 14th day of April, 1890.
F. RANDOLPH,
Notary Public for New Jersey.

Affidavit of William E. Gilmore.

In the United States Patent Office.

In the Matter of the Application of The National Phonograph Company of Orange, New Jersey, Requesting the Institution of Public-use Proceedings— On Petition.

STATE OF NEW JERSEY, } ss:
County of Essex,

William E. Gilmore, being first duly sworn, on oath doth depose and say as follows:

I am the general manager of the National Phonograph Company, the above-named petitioner, which company is the owner of the patents of Thomas A. Edison relating to phonographs, and is engaged in the sale of phonographs made by its licensee the Edison Phonograph Works, and in the commercial exploitation of the phonograph. On March 16, 1890, Leon F. Douglass of Chicago, Illinois, called at my office at Orange, New Jersey, and informed me that he had filed an application for a patent on a phonograph having a wax-like record blank of abnormally large diameter, operated at the usual shaft speed of from 100 to 120 turns per minute; that on such machine a claim had been allowed by the Patent Office; but that the said application had become involved in an interference controversy with an application for the same device, filed by Thomas H. Macdonald, and assigned to the American Graphophone Company. This information was communicated to me by Mr. Douglass freely, without reservation and without any conditions whatsoever. In this interview,

24 Mr. Douglass showed me a paper which he stated was a copy of the specification and claims forming a part of his said application; and particularly identified the claim which he informed me had been allowed by the Patent Office. I thereupon requested Mr. Douglass to permit me to copy the said allowed claim, which request was granted absolutely and without condition. In the presence of Mr. Douglass and in conformity with his offer, I then made a shorthand copy of said allowed claim and immediately transcribed my shorthand notes. The said claim which Mr. Douglass informed me was allowed by the Patent Office, is as follows:

"The combination with a large sound-record blank or cylinder of a wax-like composition, of any substantially six inches in diameter, of a talking instrument and a motor for rotating the large sound-record cylinder or blank at the usual or customary speed of 100 or 120 revolutions per minute, whereby the volume, clearness, distinctness and naturalness of the speech, vocal music, instrumental music

14 THE U. S. OF AMERICA IN RELATION OF NAT. PHONOGRAPH

or other sounds recorded or reproduced are greatly increased, substantially as specified."

WILLIAM E. GILMORE,

Sworn to before me this 14th day of April, 1890.

J. F. RANDOLPH,
Notary Public for New Jersey.

25

Attendant of Thomas A. Edison.

In the United States Patent Office.

In the Matter of the Application of the National Phonograph Company of Orange, New Jersey, Requesting the Institution of Publication Proceedings. On Petition.

STATE OF NEW JERSEY,
County of Essex.

Thomas A. Edison, being duly sworn, on oath doth depose and say as follows:

I am the inventor of the phonograph. The phonograph as devised by me in 1877 and manufactured and sold during succeeding years comprised, in the large machines, a cylinder about 9 $\frac{1}{2}$ inches in diameter, mounted on a shaft having a thread cut on a portion of its length and a screw at the other end for rotating it. A diaphragm was used, carrying a clined point. A groove was generally cut in the periphery of the cylinder, corresponding in pitch to the screw on the shaft, the latter engaging with a stationary nut, whereby when the shaft was rotated the cylinder would be moved laterally with respect to the clined point on the diaphragm. With the original phonographs, the customary practice was to cover the cylinder with a sheet of tin foil, on which would be recorded the vibrations of the diaphragm. The construction and operation of the original phonograph are familiar to most persons and have been described in many text books, publications and patents. The usual shaft

26 speed of the original phonograph was about 125 turns per minute, giving a surface speed of the recording surface of not far from 2,500 inches per minute. With a surface speed of this rate, ample opportunity was given for the distinct formation of the ripples of the record, irrespective of pitch, and in consequence, the reproductions of the original phonograph were extremely loud, much louder, in fact, than any phonograph at present on hand, essentially as a talking machine and was used almost entirely for exhibition purposes, its reproductions being sufficient to be heard easily throughout the entire portion of large halls, lecture-rooms and other auditoriums.

Since with all phonographs and other talking machines operated upon the same principle, the record is formed by the production in or upon the recording surface of waves or depressions correspond-

CO. VS. FREDERICK I. ALLEN, CLAIM'R OF PATENTS. 15

ing to the original vibrations. I found as early as 1877, from experiment and microscopical examinations, that these waves or depressions would be formed more perfectly and that the reproduction would be better and louder, if they were allowed to extend over a relatively great length of surface. Consequently, I made my original phonograph with a large blank and a high surface speed, because I wanted to secure an instrument capable of loud reproduction and suited for exhibition purposes.

About the year 1887, the original phonographs were put on the market. In these machines, paper blanks having a waxlike coating were used, the blanks being 1.25 inches in diameter and 6 inches long, with a pitch of 150 threads per inch and a usual shaft speed of about 200 turns per minute. At this shaft speed, the surface speed of these blanks was 785.4 inches per minute, somewhat lower than that used in the present Standard phonographs, while the length of the record groove was 3,709.92 inches. Owing to the low surface speed, to the objectionable character of the recording surface, and to the crudeness of the recording and reproducing devices, the reproductions secured with the old phonographs were very faint and obscure.

27 Prior to 1887, I continued the experiments which had been conducted by me at the time of the invention of the original phonograph in the use of recording surfaces of a waxlike material, and as a result of these experiments I invented the present recording cylinder, composed of an amorphous, coherent, hard, brittle, non-viscid material, such as a metallic soap. These experiments resulted, also, in the production of the modern commercial phonograph, with its detailed improvements relating to the recording and reproducing devices, its general make-up, motor, governor, &c. By reason of these improvements, in the character of the record surfaces and in the construction of the recording and reproducing devices, and furthermore, by using separately and distinct recording and reproducing devices, each fitted particularly for its special work, the loudness and clearness of the records and the durability of such records were very greatly advanced.

In 1887, I adopted the present standard-size phonograph blank, of an external diameter of 2.175 inches, a length of 4.55 inches, and with a pitch of 100 per inch. My reason for adopting a standard blank of this size were that it presented in a minimum

28 bulk a sufficient area for the making of a phonograph record of average length, without necessitating too fine a pitch as to be liable to become injured in the exigencies of use by more or less unskilled persons. A blank of this size enabled me to make my phonographs of a neat and substantial construction, while the blanks were of sufficient mass as to be strong enough to withstand the ordinary usage. I designed the Standard phonographs particularly for office work in the distillation of correspondence, and having adopted, for the more or less arbitrary reasons stated, a blank of the size indicated, I found that by turning it at a speed of about 100 rotations per minute I was enabled to secure records of

letters of an average length, which records could be reproduced clearly and satisfactorily by the employment of listening tubes. When used with listening tubes, the records secured on the standard blanks operated at a shaft speed of about 120 turns per minute, and, and are still, sufficiently loud for the purposes for which these machines were particularly designed.

The perfected Standard phonographs were first brought out about the year 1889, and were provided with electric motors having centrifugal governing devices, by which the surface speed of the blank could be varied within wide limits, or, in other words, from about 50 to 300 rotations per minute. The standard-sized phonograph blanks adopted by me in 1887, with a pitch of 100 threads per inch and a usual shaft speed of about 120 turns per minute, have been adopted by my competitors in the phonograph business and now constitute the usual standard in this art.

In September, 1888, I commenced the manufacture of doll phonographs having soap record blanks 8 inches in diameter, adapted to be operated at a shaft speed of about 120 turns. These phonographs were made and sold in 1888 and subsequently thereto.

The increase in the diameter of the phonographs from 2.1875 inches to 8 inches resulted in an increase in the surface speed of from 824.67 to 1139.976 inches per minute. These doll phonographs were capable of reproducing, and did reproduce, loudly, but owing to the fact that the reproducing device used with them was cheap and simple, the reproduction was not as clear as it would have been if the present floating-weight reproducer had been used.

In 1890, I constructed a large number of phonographs of the type described in my patent No. 610,706, dated September 13, 1888, which instruments were shipped to Great Britain. With these machines, a standard soap blank was ordinarily used, but the machine was adapted to receive a small mailing blank only .75 inches in diameter, with a length of 3.875 inches. For the making of commercial records adapted to be transcribed on the typewriter, the standard blank was used, the reproductions through the listening tubes being loud enough and clear enough for this purpose, while for mailing purposes the records were produced on the small blanks for transmission through the mails and the reproduction was sufficiently loud and clear through the listening tubes as to suit the purposes of private, confidential correspondence. With these machines, the reproduction was always superior, both in loudness and quality, with the standard blank than with the mailing blanks, the shaft speed in each instance being assumed to be the same, since the surface speed of the former (824.67 inches) was almost three times that of the latter (282.744 inches).

In 1895, I constructed at my laboratory at Orange, N. J., a machine of a new type, which I call my "400-thread machine," and which has been viewed and examined by a large number of persons. In this machine, a phonogram 2.75 inches in diameter and 6.50 inches in length is employed. By a change in the gearing, the pitch of the record grooves has been varied to from

200 to 320 and to 400 threads per inch; the shaft speed varied from 160 to 260 turns per minute, but has almost always, in my experiments, been confined to about 200 turns per minute, giving a surface speed of the record surface of 177.25 inches per minute, or more than double that of the standard blank at 120 revolutions per minute. By reason of the increased surface speed, the reproductions have been of a very superior order, both in loudness and quality, while by reason of the fineness in pitch, the phonograms are adapted for the reception of records of unusual lengths. The 400-thread machine is at present in use in my laboratory, records are frequently made thereon and visitors are allowed the opportunity of hearing its reproductions.

In March, 1896, in order that the capacity of my old infill phonograph for use with soap blanks might be determined, I made a number of soap blanks having an external diameter of 7 inches and a length of two inches, which were placed on the old infill machines and records secured thereon, the pitch being, as indicated, 25 threads per inch and the speed being 125 turns per minute. With a blank of this diameter and at the shaft speed originally, a surface speed of 2748.5 inches per minute was secured, a higher speed than any used at the present time. With the infill machine having a soap blank, the chisel point served to cut or gouge out a record, in the same way as in the modern instruments. The reproductions secured were extremely loud in diameter, although the clearness of the reproduction was necessarily limited by reason of the crudeness of the machine and of the fact that the recording device was also used, in effecting the reproduction. So far as I know, these blanks which were made by me in 1896, having a diameter of 7 inches, were the largest phonograms which have ever been made and exhibited. The mode in which these blanks were made is still in my possession.

After the Standard phonographs were brought out by me in 1889, a public demand arose for musical records, and at this time the phonographs are used almost entirely for this purpose. With standard blanks operated at a shaft speed of about 150 turns per minute, I found that a record groove of sufficient length was secured to enable ordinary musical compositions to be recorded, and when the reproduction was heard through listening tubes it was entirely satisfactory. The demand of the public has, however, during recent years, been towards the production of a phonograph for exhibition purposes wherein the reproductions of intricate musical compositions would be heard through a horn, and to this end, therefore, it became necessary to make a phonograph which, while having a sufficiently high surface speed, would have a record groove long enough for an ordinary musical composition. I, therefore, determined to go back to my original experiments with the infill phonograph, and to make a phonograph having a sufficiently large blank as to secure a high surface speed. At the present time, the National Phonograph Company, in which I am interested, is making and selling machines called the "Concert phonographs," using a soap blank of 8

inches in diameter, 4.95 inches in length, with a pitch of 100 threads per inch, and operated at a shaft speed of from 100 to 120 turns per minute. With these machines, a surface speed ranging from 1570.8 to 1884.50 inches per minute is attained. At a shaft speed of 100 turns per minute, the surface speed of the Concert phonograph blank is less than that of the blank used by me on while at 150 turns per minute, the surface speed is more. By reason of the high surface-speed and of the character of the blank and recording and reproducing devices, the reproduction obtained with the Concert phonograph is very loud and clear. These machines are, therefore, adapted for exhibition purposes, in reproducing music with a horn.

I have known since 1877 that the loudness and clearness of the reproduction depends upon the surface speed of the blank, other conditions of construction and operation being the same, and when the surface speed of one blank exceeds that of another, it may be assumed, other conditions being equal, that the reproduction of the former will be better than that of the latter. I have demonstrated this by operating a Standard phonograph at a surface speed higher than that of the Concert phonograph, in which case the reproduction of the standard machine was superior in loudness and clearness to that of the concert machine.

I am informed and believe that my competitors in business are seeking to secure a patent on a phonograph having a waxlike blank of an abnormally large diameter and operated at the usual shaft speed of 100 to 120 turns per minute, whereby a higher surface speed is secured than in the Standard phonograph operated at the same shaft speed. In this way, an increase in the surface speed

will be secured, with a consequent louder and clearer reproduction. I am unable to see upon what theory a patent can be secured on a phonograph having a large blank operated at the usual shaft speed, in view of my work in the art, both theoretically and in practice. Since 1877 I have known that an increase in the surface speed in a given machine resulted in better reproduction. This is demonstrated as a matter of fact by the use by me of blanks for mailing purposes having a diameter of only .75 inches, where the reproduction should be, and is, only loud enough for the use of blanks for mailing purposes when listening tubes are used; in inches, with a surface speed of 1180.976, where the reproduction is 3 should be loud enough to make a doll a saleable thing on the market; at a surface speed of 1727.88; in the Concert phonograph, where a blank of 5 inches is operated at surface speeds ranging from 1570.8 to 1884.50; and in the old tin-foil machines (with tin-foil and soap blanks), where a blank ranging from 6.5 to 7.0 inches was operated at a surface speed of 2748.5. Furthermore, since I have operated phonograph blanks in practice and have sold phonographs wherein the blanks were operated at surface speeds ranging from 222.744

inches per minute in the mailing machine, up to 2748.5 in the tin-foil machines, with tin-foil records and soap records, I do not see upon what theory a patent can be granted covering the operation of a blank at a speed intermediate of those extremes. Furthermore, since Standard phonographs have been made and sold since 1889 with records capable of operation at widely different surface speeds,

I do not believe that a patent should now be granted on a blank operated at a surface speed of which the standard mailing machine is capable. Finally, since I have operated the 400-thread at a surface speed of 1727.88 inches per minute, I do not believe that a patent should now be granted upon a phonograph wherein the blank is operated at a surface speed of only 1884.50 inches per minute, an increase of but a slight extent, assuming the blank for which a patent is being sought to have a diameter of 6 inches, a length of 4.25 inches and a pitch of 100 threads per inch.

In order that a clear comprehension of this subject may be secured, I have prepared a table, which I attach hereto, giving the diameter, the length, the pitch, the shaft speed, the surface speed and the length of the record groove in the eight types of phonographs or graphophones to which I have referred herein, arranged in the order of the diameter of the blanks. From this table, it will be observed that the surface speed of the large-blank machine for which a patent is sought is slightly greater than that of the 400-thread machine, which in turn is slightly greater than that of the Concert phonograph operated at 120 turns per minute, while the length of the record groove of the large-blank machine (which factor determines the quantity of the record reproduction) is about 20 % more than that of the Concert phonograph, but greatly below that of the 400-thread machine.

So far as I can determine, the phonograph for which a patent is being sought makes use of the ordinary soap blanks, which have been used on the Standard phonographs since 1889, while an

increase in the surface speed is secured in the same way as in the old tin-foil machines, by using a blank of a large diameter.

THOMAS A. EDISON.

Subscribed and sworn to before me this 15th day of April, 1890.

J. F. RANDOLPHE,
Notary Public for New Jersey.

47 2nd Affidavit of Thomas A. Edison.

In the United States Patent Office.

In the Matter of the Application of the National Phonograph Company of Orange, New Jersey, Requesting the Institution of Public-use Proceedings. On Petition.

STATE OF NEW JERSEY, }
County of Essex, } ss:

Thomas A. Edison, being duly sworn, on oath doth depose and say as follows:

I have already made an affidavit in this case relating to my work in the phonographic art, which affidavit was signed and executed April 15, 1890.

The 400-thread machine which I refer to in my first affidavit and which was made in 1896, was publicly exhibited in my laboratory in 1896 and during the succeeding years. The reproductions of musical records on that machine have been listened to by a large number of visitors to my laboratory in the year 1895 and during the succeeding years. The machine is still in my possession and is practically daily use, and many visitors to my laboratory at the present time are permitted to witness its operation and to listen to its reproductions. I believe that if this machine were sent to Washington at the present time for inspection by the examiner, and were then returned by him for use in the taking of testimony should the

48 request for the institution of these proceedings be granted, there would be danger of the machine becoming damaged in transportation.

THOMAS A. EDISON.

Sworn to and subscribed before me this eighth day of May, 1890.

J. F. RANDOLPH

Notary Public for New Jersey.

[SEAL.]

**Legal Department Records
Phonograph - Case Files**

Price Maintenance Cases

This folder contains a volume entitled *Litigation in Enforcement of System Under Which Edison Phonographs and Records Are Sold*, published by Thomas A. Edison, Inc., in April 1911. Included are printed copies of injunctions and decrees arising from price maintenance suits brought against sales agents of the National Phonograph Co. and other parties engaged in cutting prices of Edison products. Only the index, introduction, and six lists of cases have been selected. Documents pertaining to most of the listed cases can be found in the archival record group, Legal Services Department and Retained Firms.

Thomas A. Edison, Incorporated,
SUCCESSOR TO
National Phonograph Company,
ORANGE, NEW JERSEY.

LITIGATION IN ENFORCEMENT
OF SYSTEM UNDER WHICH EDISON
PHONOGRAPHS AND RECORDS
ARE SOLD.

FRANK L. DYER,
DELOS HOLDEN,
Counsel.

HERBERT H. DYKE,
Counsel in Charge of Litigation in Enforcement
of Selling System.

ORANGE, N. J., APRIL, 1911.

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THE SELLING SYSTEM.

The name of the corporation selling Edison Phonographs, Edison Records, and Supplies, up to February 28, 1911, was National Phonograph Company. On that date its name was changed to THOMAS A. EDISON, INCORPORATED. While for convenience the style "Thomas A. Edison, Incorporated, successor to National Phonograph Company," has been adopted, the identity of the corporation has been preserved, and is not affected by this change of name.*

The system under which Edison Phonographs, Edison Records, and Supplies, manufactured at Orange, N. J., under numerous patents, were sold up to and including February 28, 1911, by the National Phonograph Company, and since that time by the same corporation under its new name, "Thomas A. Edison, Incorporated," comprises two principal features, namely:

1. The license agreements required to be made by each jobber and dealer before permission is given to deal in the patented goods. These license agreements set forth at length the conditions under which the goods are licensed to be dealt in. They have been modified somewhat from time to time, particularly in form and typographical arrangement, but the principal requirements, namely: that the goods are not licensed to be sold at less than list prices, and that the violation of these restric-

*Note—The Edison Phonograph Company and the New Jersey Patent Company, the names of which appear in this volume, are corporations closely associated with the National Phonograph Company, (now Thomas A. Edison, Inc.) The Edison Phonograph Company was formerly engaged in the phonograph business, but is not actively engaged in the business at this time. The New Jersey Patent Company is a patent holding company and has never been engaged in manufacturing.

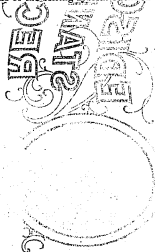
6

THE SELLING SYSTEM

tions will amount to infringement of the patents under which the goods are manufactured, have been embodied therein from the time when the system was first put into effect, in the year 1900.

Restrictive notices have been placed upon the goods themselves; in the case of Edison Records these restrictive notices have been placed upon labels pasted to the pasteboard cartons in which the records are put out. On the accompanying plate are reproduced an Edison Standard or Two-Minute Record Label, and an Edison Amber or Four-Minute Record Label.

This system is rigorously enforced. The Opinions, Orders, Decrees, Injunctions, etc., reproduced in this volume are taken from suits brought in the Federal Courts against parties guilty of violations of the provisions of the selling system outlined above.



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THOMAS A. EDISON.



EDISON
AMBEROL
RECORD

MADE IN U.S.A.
 NATIONAL BROADCASTING CO.,
 INC., NEW YORK, N. Y.
 EDISON AMBEROL RECORDS ARE
 THE ONLY RECORDS WHICH
 ARE MADE FROM THE ORIGINAL
 RECORDING OF THE VOICE OF
 THE ARTIST. THE RECORDING
 IS MADE BY THE ARTIST HIMSELF
 IN HIS OWN STUDIO. THE
 RECORDING IS MADE ON A
 SPECIAL PROCESS WHICH
 PRESERVES THE ORIGINAL
 RECORDING FOR ALL TIME.
 THE RECORDING IS MADE
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 THE RECORDING IS MADE
 ON A SPECIAL PROCESS WHICH
 PRESERVES THE ORIGINAL
 RECORDING FOR ALL TIME.

SUITS AGAINST LICENSED JOBBERS OR DEALERS

SUITS IN WHICH DEFENDANTS HAVE BEEN
 LICENSED JOBBERS OR DEALERS.

In the following cases the defendant had signed either a Dealers' License Agreement or a Jobbers' License Agreement, and had thereafter been guilty of violating one or more of the provisions thereof thereby infringing the patents under which the goods are manufactured and conditionally sold. The position of the Company in suits against such defendants, who have signed Dealers' or Jobbers' License Agreements, is to secure and well settled that suits of this nature are very rarely contested; the defendants, realizing that in all probability they will lose the suit in the end, usually prefer to let the decision go against them by default without making a useless contest.

8 SUITS AGAINST LICENSED JOBBERS OR DEALERS

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SUITS IN WHICH DEFENDANTS WERE NOT LICENSED JOBBERS OR DEALERS.

The cases treated in the following pages are suits which have been brought against unlicensed defendants.

As is naturally to be expected in a business where licensed jobbers and dealers are protected by a uniform system of prices, assuring to them a margin of profit which will make the business an attractive and profitable one to be legitimately pursued, there have been a number of pirates who have engaged in this business without having made the required license agreements, and in disregard and defiance of the restrictions upon the sale of the patented goods. Wherever this practice is persisted in suit is promptly brought.

It is sometimes supposed by unlicensed dealers and even by lawyers unfamiliar with litigation of this character that suits cannot be successfully prosecuted against parties who have not entered into contracts with the manufacturers of Edison Phonographs and Records, to sell at list prices. Such views are entirely wrong. The reader of the following pages will observe that an unlicensed dealer is subject to suit and injunction whenever he deals in the patented goods without a license. Cutting off prices of course, gives an additional ground of action against an unlicensed dealer, but he can be sued and enjoined whether he cuts prices or not.

SUITS IN WHICH DEFENDANTS WERE NOT LICENSED JOBBERS OR DEALERS.

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**CASES IN WHICH TRUSTEES IN BANKRUPTCY,
RECEIVERS IN INSOLVENCY COURTS,
SHERIFFS, AUCTIONEERS, AND SIMILAR
OFFICERS HAVE BEEN INVOLVED.**

It is a well established rule of law that when Trustees in Bankruptcy, Receivers in Insolvency Courts, Sheriffs in execution suits, Auctioneers, and the like, obtain patented goods which are subject to restrictions in the hands of the parties from whom they were obtained, the restrictions follow the goods in their hands, and that they obtain no better title thereto than that held by their principals. Following out this rule of law, the Federal Courts have granted numerous injunctions against such defendants restraining the violation of the restrictions imposed upon the sale of Edison goods. In the cases reported in the following pages, the defendants have been of one or another of the classes above named.

**CASES IN WHICH TRUSTEES IN BANKRUPTCY,
RECEIVERS IN INSOLVENCY COURTS, SHEEL-
FERS, AUCTIONEERS, AND SIMILAR
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**CASES INVOLVING THE CUT-PRICE SALE OF
EDISON RECORDS AT SECOND-HAND.**

The restrictions applied to Edison Records, namely: that they are not licensed to be sold by the *original* or *any subsequent purchaser* (except by an authorized jobber to an authorized retail dealer) for less than the list prices, applies to the records at all times whether they be new or second-hand, as any party selling them at cut prices must be either the original or a subsequent purchaser. The defense that the records trafficked in were second-hand goods has been advanced in a number of cases, orders and decrees in some of them being hereafter reproduced.

In the case against Prikovitz, in the Southern District of New York, the defense put forth by the defendant was that his goods were second-hand, but notwithstanding this supposed defense, the injunction was granted by His Honor, Judge Holt.

In the case against Fredericks, in Brooklyn, New York, the defense was that the goods were second-hand, and the pursuit of the injunction Order in that case will show clearly the views of His Honor, Judge Chatfield, upon the subject. Dixon and Morchenross were also dealers in second-hand Edison Records.

The mistaken idea is frequently entertained (particularly in the City of New York) that the possession of a City license to trade as a second-hand dealer entitles such

second-hand dealer to deal in Edison Records as second-hand articles without reference to and irrespective of the restrictions of the National Phonograph Company. There is nothing whatever in this notion as the restrictions are imposed under the patent laws of the United States and local laws and ordinances do not affect them in any way. Several of the second-hand dealers against whom the printed injunctions were granted urged the possession of second-hand licenses as a supposed defense, but nevertheless the injunctions were granted.

The case against Weinberg, in Philadelphia, was bitterly fought by the defendant at great expense, but nevertheless the second-hand defense was overruled, and it was held that whenever Edison records, whether new or second-hand are sold at cut prices, the injunction and accounting will be granted.

CASES INVOLVING THE CUT-PRICE SALE OF
EDISON RECORDS AT SECOND-HAND.

	Pages
New Jersey Patent Co. & National Phonograph Co. vs. Harry Weinberg	377-397
New Jersey Patent Co. & National Phonograph Co. vs. Franz Priksavitz	399-407
New Jersey Patent Co. & National Phonograph Co. vs. J. J. Dineen	409-413
New Jersey Patent Co. & National Phonograph Co. vs. Charles Freidrich	411-424
New Jersey Patent Co. & National Phonograph Co. vs. John Morchertness, doing business as German Record Exchange	425-433

CONTEMPT OF COURT.

The Orders, Decrees and Injunctions reproduced in the preceding pages show the extent of the rights which may be invoked against those who cut prices or otherwise violate the restrictions upon the use and sale of Edison Phonographs and records. As a rule, cases of this kind are closed with the issuance of an injunction. Once in a very great while, however, a price-cutter is encountered who has not learned to accord proper respect to the mandates of the United States courts, and who is willing to take the chances of disobeying the injunction with which he has been served. Such an act is a contempt of court which may be severely punished, by fine or imprisonment or both, and the courts of the United States are keen to enforce the orders which they have made whenever violation is proved.

The Edison Companies have never but once had to go to the extreme length of prosecuting a contempt charge against a price-cutter. In the following pages will be found reproductions of the court papers showing the history of that case and its outcome, which proved most unpleasant to the defendant who was able to avoid imprisonment only by promptly paying the fine imposed upon him.

United States Circuit Court

NORTHERN DISTRICT OF IOWA,
CENTRAL DIVISION.

NEW JESBY PATENT COMPANY AND
NATIONAL PHONOGRAPH COMPANY,
Complainants,

vs.

EDWARD H. MARTIN, FRED M. MAR-
TIN, M. M. MARTIN, MARTIN TELE-
PHONE COMPANY AND R. L. STER-
LING,
Defendants.

In Equity on
U. S. Letters
Patent No.
782,373.

RESTRAINING ORDER.

PRELIMINARY INJUNCTION.

MEMORANDUM ON DEMURRER TO BILL OF
COMPLAINT.

FINAL DECREE.

OPINION IN CONTEMPT MATTER

ORDER OF PUNISHMENT FOR CONTEMPT

KELLEHER & O'CONNOR,
FRANK L. DYER,
HERBERT H. DYER,
For Complainants.

WESLEY MARTIN,
For Defendants.

CASES IN FOREIGN COUNTRIES.

In addition to the numerous cases in the United States sustaining the selling system outlined on Page 5, there have been a considerable number of decisions establishing the same principles in foreign countries. Lack of space forbids the publication here of such decisions in the lower courts.

Space is found, however, for the case of the National Phonograph Company of Australia, Ltd., vs. Menck, decided by the Privy Council, the highest tribunal of the British Empire, on February 3, 1911. This is not only the latest utterance of the courts on this subject, but it is also of extreme interest and importance because it definitely settles the law on this topic for the entire Kingdom of Great Britain and its numerous colonies.

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